(6 pages) **Reg. No. :** .....

Code No.: 10095 E **Sub. Code: SMCS 21/ SMSE 21/AMCS 21/ AMSE 21**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Second Semester

Computer Science / Software Engineering – Core

OBJECT ORIENTED PROGRAMMING IN C++

(For those who joined in July 2017-2020)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer:

1. Which of the following type is provided by C++ but not C?

   (a) double (b) float

   (c) int (d) bool

2. Which of the following is used to terminate the function declaration in C++?

(a) ; (b)]

(c)) (d) :

3. Which keyword is used to define the macros in C++?

(a) #macro (b) #define

(c) macro (d) define

4. The C++ code which causes abnormal termination of a program should be written under ———— block.

(a) catch (b) throw

(c) try (d) finally

5. How many parameters are legal for non-type template?

(a) 1 (b) 2

(c) 3 (d) 4

6. How many parameters does a default constructor require?

(a) 1 (b) 2

(c) 0 (d) 3

7. To which does the function pointer point to?

(a) variable

(b) constants

(c) function

(d) absolute variables

8. What is the mandatory part to present in function pointers?

(a) & (b) return values

(c) data types (d) $

9. By default, all the files in C++ are opened in ———— mode.

(a) Text (b) Binary

(c) ISCII (d) VTC

10. Which header file is used for reading and writing to a file?

(a) #include<iostream>

(b) #include<fstream>

(c) #include<file>

(d) #include<fe>

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Elaborate the purpose of friend function in C++.

Or

(b) How will you specifying a class? Give example.

12. (a) Describe the dynamic initialization of objects.

Or

(b) What is a destructor? What are the characteristics of destructor?

13. (a) Explain the general form of using abstract classes.

Or

(b) Discuss the multilevel inheritance with neat diagram.

14. (a) How will you declare a virtual function? Explain.

Or

(b) Determine the advantages of pointers in C++.

15. (a) Distinguish between the class templates and function templates.

Or

(b) Summarize the opening and closing a file in C++.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Discuss the syntax and example of nesting of member function.

Or

(b) Write a C++ program for finding the large value using Friend Function.

17. (a) Examine the constructors with default arguments.

Or

(b) Write a program in C++ which calculates the factorial of a given number.

18. (a) Illustrate the purpose of hybrid inheritance with example.

Or

(b) Demonstrate the implementation of virtual base classes.

19. (a) Write a C++ program for displaying personal details using classes and objects.

Or

(b) Evaluate the managing output with manipulators.

20. (a) Write a C++ program to generate Fibonacci series.

Or

(b) Discuss the sequential input and output operations.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10097 E **Sub. Code : SMCS 32**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Third Semester

Computer Science – Core

COMPUTER ARCHITECTURE

(For those who joined in July 2017-2019 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. _____ is called as brain of the computer.

   (a) Control Unit (b) ALU

   (c) CPU (d) Memory Unit

2. _____ used to overcome the difference in data transfer speeds of various devices.

   (a) buffer (b) multiple bus

   (c) router (d) bridge

3. The _____ address is designed to the memory address obtained from the computation dictated by the given addressing mode.

(a) effective address

(b) indirect address

(c) direct address

(d) relative address

4. The addressing mode, where you directly specify the operand value is _____.

(a) Immediate (b) Direct

(c) Definite (d) Relative

5. The array multiplier is used the find the product of a 3-bit number with a 4-bit number. How many 4 bit addresses are required to perform multiplication?

(a) 1 (b) 2

(c) 3 (d) 4

6. The multiplier is stored in _____.

(a) PC register (b) Cache

(c) Shift register (d) None

7. The memory _____ control lines are enabled during a memory transfer.

   (a) read

   (b) write

   (c) both (a) and (b)

   (d) None of the mentioned

8. After the completion of the DMA transfer, the processor is notified by

   (a) Acknowledge signal

   (b) Interrupt signal

   (c) WMFC signal

   (d) None of the mentioned

9. Cache memory works on the principle of

   (a) locality of data

   (b) locality of memory

   (c) locality of reference

   (d) locality of reference and memory

10. Which of the following is lowest in memory hierarchy?

   (a) Cache memory

   (b) Secondary memory

   (c) Registers

   (d) RAM

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Give a short note on timing and control operations.

Or

(b) Discuss in detail the phases in instruction cycle.

12. (a) Write about data transfer instructions.

Or

(b) Explain in detail program interrupts and its types.

13. (a) Describe array multiplier in detail.

Or

(b) Analyze the process of divide overflow.

14. (a) Summarize DMA controller with a help of a block diagram.

Or

(b) Illustrate daisy chaining interrupt with the help of diagram.

15. (a) Explain how cache memory performance can be measured and improved.

Or

(b) Classify and explain various secondary storage devices with diagram.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Comment on list of registers used for the basic computer.

Or

(b) Briefly explain about instruction codes.

17. (a) Explain various program control instructions in detail.

Or

(b) Discuss about various instruction formats with example.

18. (a) Discuss hardware implementation for multiplication algorithm.

Or

(b) Narrate the Concept of floating point arithmetic operations.

19. (a) Discuss different modes of transfer in detail.

Or

(b) Describe about Input-output interface with neat diagram.

20. (a) Discuss the three mapping techniques in memory hierarchy with suitable example.

Or

(b) Narrate virtual memory and advantage of using virtual memory.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10103 E **Sub. Code : SMCS 52/ SMSE 52/AMCS 52**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Fifth Semester

Computer Science/Software Engineering – Core

DATA COMMUNICATION AND COMPUTER NETWORK

(For those who joined in July 2017-2020)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. ———— connection provides a dedicated link between two devices.

   (a) primary

   (b) multipoint

   (c) point-to-point

   (d) secondary

2. A _____ is a set of rules that governs data communication.

(a) protocol (b) forum

(c) standard (d) none of the above

3. ———————— refers to two characteristics: when data should be sent and how fast it can be sent.

(a) Semantics

(b) Timing

(c) Syntax

(d) None of the above

4. An unauthorized user is a network ———————— issue.

(a) Security (b) Reliability

(c) Performance (d) All the above

5. When data are transmitted from device A to device B, the header from A's layer 4 is read by B's ———————— layer.

(a) Transport (b) Application

(c) Physical (d) None of the above

6. The ———————— layer is responsible for moving frames from one hop (node) to the next.

(a) transport (b) data link

(c) physical (d) none of the above

7. The OSI model consists of _____layers

(a) three (b) Four

(c) Five (d) Seven

8. In OSI network architecture, the routing is performed by ————————

(a) Network layer (b) Data link layer

(c) Transport layer (d) Session layer

9. A devices that links two homogeneous packet-broadcast local network is ————————

(a) Hub (b) Bridge

(c) Repeater (d) Gateway

10. In the ———————— method of flow control, the sender sends one frame and waits for an acknowledgment before sending the next frame.

(a) Sliding Window (b) Stop-and-wait

(c) Go-Back-n ARQ (d) Multi-Window

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Describe the TCP/IP protocol suite with neat diagram.

Or

(b) Summarize the physical structure of network attributes.

12. (a) Explain the Twisted-Pair Cable with neat diagram.

Or

(b) Distinguish between the Periodic and Non-periodic Signals.

13. (a) Explain the datagram network with four switches with diagram.

Or

(b) What are the services provided by telephone networks? Explain.

14. (a) How does a single bit error differ from a burst error?

Or

(b) Distinguish between the fixed-size framing and variable-size framing.

15. (a) Elaborate the IPv6 datagram header and payload.

Or

(b) Describe the well-known ports for UDP.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) What are the five basic components of data communication system? Explain.

Or

(b) Discuss the seven layers of ISO OSI reference model.

17. (a) What are the categories of multiplexing? Explain.

Or

(b) Illustrate the fiber-optic cable with neat diagram.

18. (a) Compare the circuit switching and message switching techniques.

Or

(b) Explain the Hybrid Fiber-Coaxial (HFC) network with diagram.

19. (a) Illustrate the design of Stop-and-Wait Protocol.

Or

(b) Write down the Ethernet evolution through four generations.

20. (a) Compare the connectionless versus connection-oriented service.

Or

(b) How the routers connecting independent LANs and WANs? Explain.

———————

(7 pages) **Reg. No. :** .....

Code No. : 10105 E **Sub. Code : SMCS 61/ SMSE 61/AMCS 61**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Sixth Semester

Computer Science/ Software Engineering - Core

OPERATING SYSTEMS

(For those who joined in July 2017-2020)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer:

1. To access the services of the operating system, the interface is provided by the ————————

   (a) Library

   (b) System calls

   (c) Assembly instructions

   (d) API

2. On systems where there is multiple operating systems, the decision to load a particular one is done by?

   (a) Process control block

   (b) File control block

   (c) Boot loader

   (d) Bootstrap

3. If a process fails, most operating system write the error information to a ———————

   (a) New file

   (b) Another running process

   (c) Log file

   (d) Entry file

4. CPU scheduling is the basis of ———————

   (a) multiprogramming operating systems

   (b) larger memory sized systems

   (c) multiprocessor systems

   (d) none of the mentioned

5. The segment of code in which the process may change common variables, update tables, write into files is known as

(a) program

(b) critical section

(c) non - critical section

(d) synchronizing

6. semaphore is a/an ———————— to solve the critical section problem.

(a) hardware for a system

(b) special program for a system

(c) integer variable

(d) none of the mentioned

7. Because of virtual memory, the memory can be shared among

(a) processes

(b) threads

(c) instructions

(d) none of the mentioned

8. ———————— is the concept in which a process is copied into the main memory from the secondary memory according to the requirement.

(a) Paging

(b) Demand paging

(c) Segmentation

(d) Swapping

9. ———————— is a unique tag, usually a number identifies the file within the file system.

(a) File identifier

(b) File name

(c) File type

(d) None of the mentioned

10. The operating system keeps a small table containing information about all open files called ————————

(a) file table (b) directory table

(c) open-file table (d) system table

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Differentiate between the system calls and system programs.

Or

(b) Explain the operations of operating system.

12. (a) Describe the purpose of process scheduling.

Or

(b) Write about communication in client server system.

13. (a) Summarize the requirements to solve the critical-section problem.

Or

(b) What are the methods used to prevent deadlocks? Explain.

14. (a) Elaborate the thrashing in virtual memory management.

Or

(b) Identify the purpose of swapping in memory management.

15. (a) Bring out the overview of mass storage structure.

Or

(b) What are the most common schemes for defining the logical structure of a directory? Explain.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 600 words.

16. (a) Determine the structure of operating system.

Or

(b) Outline the design and implementation of operating system.

17. (a) Discuss the any two types of CPU-Scheduling algorithms.

Or

(b) What are the functions of multiple processor scheduling? Explain.

18. (a) Explain the classic problems of synchronization.

Or

(b) How will you recovery from deadlock? Explain.

19. (a) What is the concept of segmentation? What is the main problem with segmentation?

Or

(b) Examine the contiguous memory allocation with diagram.

20. (a) Formulate the file sharing protection in a modern computer system.

Or

(b) What are the various types of allocation methods in file management? Explain.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10106 E **Sub. Code : SMCS 62/ SMSE 62**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Sixth Semester

Computer Science / Software Engineering – Core

COMPUTER GRAPHICS AND VISUALIZATION

(For those who joined in July 2017-2019)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The primary output device in a graphic system is:

   (a) Video monitor

   (b) Scanner

   (c) Neither (a) nor (b)

   (d) Printer

2. CAD stands for ————————

(a) Computer art design

(b) Computer-aided design

(c) Car art design

(d) None of the above

3. We translate a two-dimensional point by adding:

(a) Translation distance

(b) Translation difference

(c) X and Y

(d) Only (a)

4. Aspect ratio means: ————————

(a) Number of pixels

(b) Ratio of horizontal points to vertical points

(c) Ratio of vertical points to horizontal points

(d) Both (b) and (c)

5. The process of extracting a portion of a database or a picture inside or outside a specified region are called ————————

(a) Transformation (b) Clipping

(c) Projection (d) Mapping

6. The process of mapping a world window in world coordinate system to viewport are called _____

(a) Screen coordinate system

(b) Viewport

(c) Clipping window

(d) Transformation viewing

7. Which of the following transformations are most common that are applied on three-dimensional objects?

(a) Translation

(b) Scaling

(c) Rotation

(d) Translation, Scaling, Rotation

8. In which of the following, the projection plane is intersected by all three *x*, *y* and *z* axes at the same distances?

(a) Cabinet projection

(b) Perspective projection

(c) Isometric projection

(d) Cavalier projection

9. Which co-ordinates allow common vector operations such as translation, rotation, scaling and perspective projection to be represented as a matrix by which the vector is multiplied.

(a) vector co-ordinates

(b) 3d co-ordinates

(c) affine co-ordinates

(d) homogenous co-ordinates

10. _____ and _____ are two types of transformations

(a) quadratic, cubic (b) variable, affine

(c) linear, quadratic (d) linear, affine

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, Choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain the following video displays

(i) Refresh CRT (ii) Color CRT

Or

(b) Discuss in detail about the Line drawing DDA scan conversion algorithm.

12. (a) Explain about composite transformations.

Or

(b) Write a note on the following

(i) Reflection (ii) Shear

13. (a) Elaborate Cohen-Sutherland Line clipping algorithm.

Or

(b) Discuss about two dimensional viewing functions.

14. (a) Describe interactive input methods.

Or

(b) Write down and explain 3D rotation.

15. (a) Describe about 3D projection.

Or

(b) Explain about depth buffer visible surface detection method.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 600 words.

16. (a) Discuss in detail about Various Input Devices.

Or

(b) With the help of example, explain the Bresenham's line drawing algorithm.

17. (a) Explain the basic two-dimensional geometric transformations with appropriate diagram.

Or

(b) Briefly explain about composite transformation.

18. (a) Give a detailed note on window to viewport coordinate transformation.

Or

(b) Outline the steps involved in Sutherland-Hodgeman polygon clipping algorithm.

19. (a) Explain about the basic transformations performed on three dimensional objects.

Or

(b) Illustrate about input of graphical data.

20. (a) Briefly explain about

(i) A-Buffer Method

(ii) Scan line Method

Or

(b) Discuss about three dimensional viewing.

———————

(6 pages)

Reg. No. : .....

Code No. : 10107 E **Sub. Code : SMCS 63**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024.

Sixth Semester

Computer Science–Core

DATA WAREHOUSING AND DATA MINING

(For those who joined in July 2017–2019)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Where is datawarehouse used?
   (a) Transaction system
   (b) Logical system
   (c) Decision Support System
   (d) None

2. Who is responsible for running queries and reports against data warehouse tables?

(a) Software (b) Hardware

(c) Middle ware (d) End–Users

3. _____: data is stored in Multidimensional formatted databases called 'Data Cubes'.

(a) OLTP (b) MOLAP

(c) ROLAP (d) None

4. _____are some popular OLAP tools.

(a) Metacube, Informix

(b) Oracle Express, Essbase

(c) HOLAP

(d) MOLAP

5. _____is a process used to determine data patterns and extract useful information from data.

(a) Data Warehousing (b) Data Mining

(c) Both (a) & (b) (d) None

6. The output of KDD is _____

(a) Data (b) Information

(c) Query (d) Useful Information

7. _____maps data into predefined groups.

(a) Regression (b) Time Series Analysis

(c) Prediction (d) Classification

8. The Right hand side of an association rule is called _____

(a) Consequent (b) Onset

(c) Antecedent (d) Precedent

9. _____is method of cluster analysis using a pre–specified number of clusters.

(a) Hierarchical (b) K–Means

(c) Partitioned (d) None

10. _____is a clustering method that is used machine learning to separate clusters of high density from clusters of low density.

(a) Hierarchical (b) K–Means

(c) DBSCAN (d) Partitioned

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write down the nine decisions in the design of a Datawarehousing.

Or

(b) Give a brief note on Metadata.

12. (a) What is the need for applications in Business Analysis?

Or

(b) What is the need for OLAP?

13. (a) What do you mean by Data Integration?

Or

(b) Write down any five Datamining issues.

14. (a) What is Classification?

Or

(b) Define and give a brief note on Back Propogation.

15. (a) What is Cluster Analysis?

Or

(b) Write down datamining applications.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss in detail about Datamarts and Information Delivery System.

Or

(b) What will be the Business Considerations : ROI in building a Datawarehouse? List out the benefits of Datawarehousing.

17. (a) How do you categorize the OLAP tools?

Or

(b) Write short note on the following:

(i) Multidimensional Data Model

(ii) OLAP Tools and the Internet

18. (a) What is Data Preprocessing? Explain different types of Data cleaning methods.

Or

(b) Discuss the Datamining functionalities in detail.

19. (a) What is Apriori algorithm? How to find frequent itemsets using candidate generation?

Or

(b) What is Prediction? Explain Linear and Non Linear Regression in detail.

20. (a) Explain Agglomerative and Divisive Hiearchial clustering model.

Or

(b) Describe K–Mean Clustering method in detail.

———————

(6 pages) **Reg. No. :** .....

Code No.: 10111 E **Sub. Code: SECS 6 A/ SESE 6 A**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024.

Sixth Semester

Computer Science / Software Engineering

Major Elective – INTERNET OF THINGS

(For those who joined in July 2017-2019)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer:

1. Which device attached to the asset of interest, and provides sensing and actuation capabilities?

   (a) IoT Device

   (b) M2M Device

   (c) LAN Device

   (d) LPWAN Device

2. Write full form for GIS
   (a) Global Intensity System
   (b) Global Information System
   (c) Geographic Information System
   (d) Geographic Information Security

3. ———— can be used to build advanced micro-sized sensors like accelerometers and gyroscopes.
   (a) Micro Electro Mechanical Systems (MEMS)
   (b) Micro Energy Mechanical Systems (MEMS)
   (c) Mini Electro Mechanical Systems (MEMS)
   (d) Maximum Energy Mechanical Systems (MEMS)

4. The cognitive and conceptual human skills that were first embedded in
   (a) Microcontroller
   (b) Semiconductors
   (c) Single Integrated Circuit
   (d) Microprocessor

5. The Management Agent can be controlled from
   (a) CPE WAN Machine Protocol (CWMP)
   (b) CPE WAN Multi Protocol (CWMP)
   (c) CPE WAN Micro Protocol (CWMP)
   (d) CPE WAN Management Protocol (CWMP)

6. Which device is used for remote provisioning of SIM targeting M2M devices?

(a) Machine Communications Identity Module

(b) Machine Communications Identity Method

(c) Machine Complete Identity Module

(d) Machine Complete Information Module

7. The Class Diagrams consists of boxes that represent the different classes of the model connected with each other through typically continuous lines or arrows, which represent ———— between the respective classes.

(a) Architecture (b) Relationships

(c) Structure (d) Functions

8. Write the full form for IETF

(a) International Engineering Task Force (IETF)

(b) Internet Enhancement Task Force (IETF)

(c) Internet Engineering Track Force (IETF)

(d) Internet Engineering Task Force (IETF)

9. An IoT system is typically deployed to monitor and control ————.

(a) Physical Entities (b) Logical Entities

(c) Virtual Entities (d) Numerical Entities

10. Specific ———— capabilities are basic functional requirements.

(a) System Formation

(b) Monitoring

(c) Sensing and Actuating

(d) Data Processing

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Briefly describe about the key application areas of M2M.

Or

(b) Explain about the main characteristics of M2M.

12. (a) Briefly describe about the information and market places.

Or

(b) Briefly give the Main design principles and needed capabilities.

13. (a) Give detailed description on various types of devices.

Or

(b) Clearly state the deployment advanced devices.

14. (a) Give detailed description on main services provided by the cloud computing.

Or

(b) Explain most important three kinds of devices used for the IoT domain model.

15. (a) Briefly discuss about information flow and life cycle from information view.

Or

(b) Give detailed disunion on interaction and remote control.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Discuss in detail about the Barriers and concerns.

Or

(b) Give detailed note on use case example.

17. (a) Briefly describe about the IoT value chains.

Or

(b) Explain about the standard consideration in detail.

18. (a) Write a detailed description on local and wide area networking.

Or

(b) Give brief note on knowledge management with neat diagram.

19. (a) Explain about the Open Geospatial Consortium architecture.

Or

(b) Discuss about the IoT reference model and architecture.

20. (a) Explain about the information description from information view.

Or

(b) Briefly discuss about the devices and networks.

———————

(6 pages)

Reg. No. : .....

Code No. : 10112 E **Sub. Code : SECS 6 B/ SESE 6 B**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Sixth Semester

Computer Science/Software Engineering – Major Elective

BIG DATA ANALYTICS

(For those who joined in July 2017-2019)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which of the following is not a common challenge associated with Big Data?

   (a) Data Quality (b) Data Integration

   (c) Data Privacy (d) Data Duplication

2. Which of the following is a popular NoSQL database used for Big Data processing?

(a) MySQL (b) PostgreSQL

(c) Oracle (d) MongoDB

3. Which of the following is not a common type of data in Big Data analysis?

(a) Structured Data

(b) Simple Data

(c) Unstructured Data

(d) Semi-Structured Data

4. Which of the following is a method for analyzing data in which the data is split into smaller subsets and processed in parallel across multiple server or nodes

(a) Batch Processing (b) Stream Processing

(c) Map Reduce (d) Hive

5. Which of the following is not a common data storage technology used for Big Data processing?

(a) MySQL

(b) Cassandra

(c) Hadoop Distributed File System (HDFS)

(d) Amazon S3

6. Which of the following is not a common data visualization tool used for Big Data analysis?

(a) Tableau (b) Qlik View

(c) Microsoft Excel (d) D3.js

7. Which of the following is not a popular open-source platform used for real-time data processing and analytics?

(a) Apache Kafka (b) Apache Hadoop

(c) Apache Spark (d) Apache Storm

8. Which of the following is not a common method for selecting the best features for a machine learning mode?

(a) Filter Methods

(b) Wrapper Methods

(c) Embedded Methods

(d) Extrapolation Methods

9. Which of the following is a technique for reducing the size of a dataset by removing duplicate data points?

(a) Clustering (b) Sampling

(c) Deduplication (d) Normalization

10. Which of the following is a technique for dealing with missing data?

(a) Imputation

(b) Clustering

(c) Sampling

(d) Dimensionality Reduction

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Explain in detail about industry example of big data.

Or

(b) Write short notes on database marketers.

12. (a) Explain about credit risk management.

Or

(b) Give short notes about intraday risk analytics.

13. (a) Derive the open source technology for big data.

Or

(b) What are the terms of big data technology?

14. (a) What are big data computing platforms explain with detailed examples?

Or

(b) Briefly describe various types of big data technology.

15. (a) Derive the 90/10 rule.

Or

(b) Discuss in detail about the principles of big data ethics.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 600 words.

16. (a) Discuss in detail about big data and why it is important?

Or

(b) Give detailed note on benefits and uses of big data?

17. (a) Describe in detail Why BI is not a data science.

Or

(b) Briefly discuss about uses and sources of intraday liquidity with example.

18. (a) Give the difference between traditional data and big data.

Or

(b) Briefly describe the advantage and disadvantage of crowdsourcing.

19. (a) What is Last Mile of Analytics? Give use Cases for The Last Mile of Analytics.

Or

(b) Explain about 360º modeling in data analytics.

20. (a) Write briefly note about the data privacy and ethics.

Or

(b) Explain about the 5 functions of counter intelligence.

———————

(6 pages)

Reg. No. : .....

Code No. : 10113 E **Sub. Code : SECS 6 C/ AECS 63**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024.

Sixth Semester

Computer Science

Major Elective – NEURAL NETWORKS

(For those who joined in July 2017–2020)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. The cell body of neuron can be analogous to what mathematical operation?

   (a) Summing

   (b) Differentiator

   (c) Integrator

   (d) None of the mentioned

2. What is the feature of ANNs due to which they can deal with noisy, fuzzy, inconsistent data?

   (a) Associative nature of networks

   (b) Distributive nature of networks

   (c) Both associative and distributive

   (d) None of the mentioned

3. The process of adjusting the weight is known as?

   (a) Activation

   (b) Synchronization

   (c) Learning

   (d) None of the mentioned

4. What is asynchronous update in neural networks?

   (a) Output units are updated sequentially

   (b) Output units are updated in parallel fashion

   (c) Can be either sequentially or in parallel fashion

   (d) None of the mentioned

5. Which is the most direct application of neural networks?

   (a) Vector quantization

   (b) Pattern mapping

   (c) Pattern classification

   (d) Control applications

6. What are pros of neural networks over computers?

(a) They have ability to learn b examples

(b) They have real time high computational rates

(c) They have more tolerance

(d) All of the mentioned

7. What is the critical threshold voltage value at which neuron gets fired?

(a) 30mv (b) 20mv

(c) 25mv (d) 10mv

8. How can states of units be updated in Hopfield model?

(a) Synchronously

(b) Asynchronously

(c) Synchronously and asynchronously

(d) None of the mentioned

9. What are general limitations of back propagation rule?

(a) Local minima problem

(b) Slow convergence

(c) Scaling

(d) All of the mentioned

10. What property should a feedback network have, to make it useful for storing information?

(a) Accretive behavior

(b) Interpolative behaviour

(c) Both accretive and interpolative behavior

(d) None of the mentioned

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) What are the steps in neural processing? Explain.

Or

(b) Distinguish between the brain and the computer.

12. (a) Elaborate the concept of multi layer perceptron networks.

Or

(b) Summarize the algorithm of single layer perception.

13. (a) Write a note on continues Hopfield net.

Or

(b) What are the applications of back propagation network? Explain.

14. (a) What are the training phases of full CPN? Explain.

Or

(b) Analysis the purpose of counter propagation network.

15. (a) Bring out the image analysis and interpretation of neural networks in healthcare.

Or

(b) Mention the observing data and variables of neural networks in bankruptcy forecasting.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain the basic building blocks of artificial neural networks.

Or

(b) Compare the artificial and biological neural networks.

17. (a) Outline the architecture of single layer perception.

Or

(b) Illustrate the McCulloch–Pitts neuron model with diagram.

18. (a) Describe the application algorithm of discrete Hopfield net.

Or

(b) Elaborate the relation between RAM and Hopfield nets.

19. (a) Discuss the Kohonen self organizing feature maps.

Or

(b) Analysis the architecture of forward only propagation network.

20. (a) Demonstrate the bioinformatics applications of neural networks.

Or

(b) Enumerate the applications of neural networks in arts.

———————

Reg. No. : .....

Code No. : 10117 E **Sub. Code : SNCS 3 B/ SNSE 3 B/ANCS 32/ ANSE 32**

U.G. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Third Semester

Computer Science/Software Engineering

Non Major Elective – BASIC PROGRAMMING DESIGN

(For those who joined in July 2017-2020)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL the questions.

Choose the correct answer :

1. The graphical representation of an algorithm is called _____.
   (a) Program (b) Picture
   (c) Flow char (d) Flow link

2. The diamond Shape symbol in the flow chart signifies
   (a) Processing (b) Connectors
   (c) Decision (d) Links

3. Flow lines in flow chart are used to connect _____.

(a) Two terminals (b) Two connectors
(c) Two input (d) All of these

4. Compiler and Interpreter are also called as _____.

(a) Loaders (b) Linkers
(c) Translator (d) Hardware

5. Cobol is considered to be a

(a) 1 GL (b) 2 GL
(c) 3 GL (d) 5 GL

6. The language used in making web pages is _____.

(a) C++ (b) PROLOG
(c) PASCAL (d) JAVA

7. The core Language of Artificial Intelligence is _____.

(a) LISP (b) Java
(c) Visual Basic (d) VC++

8. Which of the following is a system Software?

(a) MS-Word (b) Ms-Excel
(c) Tally (d) OS

9. Linux operating system is a type of _____ software

(a) Shareware (b) Freeware
(c) Commercial (d) Proprietary

10. _____ is used to, create web pages

(a) HTML (b) Cobol

(c) C (d) C++

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Write an Algorithm to Find the greatest among three numbers.

Or

(b) Construct the flow chart for find biggest among three numbers.

12. (a) Define Syntax and Logical Errors.

Or

(b) Mention the advantages of Black Box Testing.

13. (a) Mention the advantages of Machine Language.

Or

(b) List out the types of Programming Languages.

14. (a) Define Software and Hardware.

Or

(b) What is the difference between Compiler and Interpreter?

15. (a) Discuss about ISOC and IAB.

Or

(b) Discuss about URL.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Write detail notes on Program Development Cycle.

Or

(b) Discuss about Flow charts and its uses.

17. (a) Write detail notes on Structural Programming.

Or

(b) Describe the White box Testing.

18. (a) Discuss about Third Generation Languages.

Or

(b) Discuss about the Classification of Programming Languages.

19. (a) Explain – Linkers, Loaders and Interpreter.

Or

(b) Discuss about Application Software.

20. (a) Discuss about ISP and Web Servers.

Or

(b) List out the various types of Internet Connection.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10118 E **Sub. Code : SNCS 4 A/ SNSE 4 A/ANCS 41/ ANSE 41**

U.G. (CBCS) DEGREE EXAMINATION, APRIL 2024

Fourth Semester

Computer Science/Software Engineering

Non Major Elective – HTML

(For those who joined in July 2017-2020)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The acronym www stands for ————————

(a) World wide web (b) World web wide

(c) Wide world web (d) None

2. HTML in a ———————— language

(a) procedural (b) Object -oriented

(c) Object based (d) Mark up

3. An unordered list in HTML documents starts with

(a) < li > tag (b) < lu > tag

(c) < ul > (d) < lu>

4. HTML < dl > tag defines the

(a) unordered list

(b) ordered list

(c) duplication list

(d) descriptive list

5. Which from following is not a type of screen frames in HTML.

(a) i frame (b) no frame

(c) frameset (d) u frame

6. Which of the following is true regarding the < caption > tag

(a) it defines a caption for table

(b) it can specify only one caption per table

(c) it must to inserted immediately after the < table > tag

(d) All the above

7. What does < br > tag used to add you web page.

(a) Long break (b) Line break

(c) Paragraph break (d) None

8. What are the two required attributes of HTML <img> tag

(a) Src and alt (b) alt and mark

(c) canvas and src (d) Caption and src

9. DHTML stands for

(a) Document HTML

(b) Data Binding HTML

(c) Dynamic HTML

(d) Digital HTML

10. What kind of scripting language in DHTML?

(a) Client

(b) Sever

(c) Neither client nor server

(d) None

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write about the history of HTML.

Or

(b) Write a note on banners.

12. (a) Write a note on attributes in the header section.

Or

(b) Explain prologue and its uses in HTML document.

13. (a) What are the special characters in HTML?

Or

(b) Design a web page on your home town in appropriate colors.

14. (a) Explain Type attribute in HTML.

Or

(b) Write about sample code for unordered list.

15. (a) Explain the various units of measurements used to specify margins.

Or

(b) Explain how will you design a style.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Design a document describing you. Assign a suitable background design, background color and text color.

Or

(b) Write a note on color combination and designing color using the basic colors.

17. (a) Write a HTML document to print the following

(i) Own house

- 2400 square feet living area
- separate Bunglaw
- car shed available

(ii) Car

- Swift dizire
- Register number TN 74 8145
- 2015 model

Or

(b) Design a web page of your favourite teacher explaining his academic and personal facts and give suitable leadings and horizontal rules.

18. (a) Write short notes on

- Coloring cells
- Column specification
- Alignment

Or

(b) Explain with example of NESTED list.

19. (a) Write a frameset statement pair to design a table as shown below.

one	two	three	
four	five	six	zero
seven	eight	nine	

Or

(b) Explain the three types of style sheets linking to HTML documents.

20. (a) Explain the multiple style sheets with suitable example.

Or

(b) Explain the Enternal style sheets with suitable example.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10119 E **Sub. Code : SNCS 4 B/ SNSE 4 B/ANCS 42/ ANSE 42**

U.G. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Fourth Semester

Computer Science / Software Engineering

Non Major Elective – PROGRAMMING IN C

(For those who joined in July 2017-2020)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. An unsigned integer variable occupies memory.

   (a) 2 bytes (b) 4 bytes

   (c) 1 byte (d) 8 bytes

2. What is the value of !0?

   (a) 0 (b) 1

   (c) –1 (d) α

3. The escape sequence '1t' is a

(a) tab (b) neat line

(c) backspace (d) white space

4. The ———— statement reads all types of data values

(a) scan f( ) (b) print f( )

(c) put s( ) (d) abs ( )

5. The array name itself is pointer to

(a) 0^{th} element (b) 1^{st} element

(c) last element (d) all the above

6. In long k[4], the total memory occupied by the array is

(a) 4 (b) 8

(c) 16 (d) 32

7. ———— header file is to be included for using string functions.

(a) str.h (b) stdio.h

(c) strio.h (d) string.h

8. The string is terminated with ———— character.

(a) '?' (b) '\o'

(c) "#" (d) "\b"

9. Following one key word is used for function not returning any value

(a) void (b) int

(c) auto (d) none of the above

10. The function name itself is

(a) an address (b) value

(c) definition (d) none of the above

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain the numerical constants used in C.

Or

(b) Discuss the order of evaluation of expressions.

12. (a) Explain sleep( ) and system ( ) functions.

Or

(b) What are the limitations of switch case statement?

13. (a) How do you choose between while and for loops?

Or

(b) Write a program to find the sum of odd numbers between 1 and 1000.

14. (a) Write a program to reverse a string.

Or

(b) What is the use of at of ( ) function?

15. (a) How a function works? Explain.

Or

(b) Write a program to compare two return values of functions.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Describe the rules for defining variables.

Or

(b) Explain the Bitwise operators used in C.

17. (a) Explain the formatted functions.

Or

(b) Discuss the goto and continue statements.

18. (a) Write a program to sort the array elements in ascending order.

Or

(b) Explain do and for statements.

19. (a) Write a program to compare two strings upto specified length.

Or

(b) Explain string standard functions.

20. (a) Explain how functions are used in decision statements.

Or

(b) Write a program to copy array elements using user defined function.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10127 E **Sub. Code : SMIT 21/ SMCT 21/AMIT 21/ AMCT 21**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Second Semester

Information Technology/Computer Science and I.T.– Core

FUNDAMENTALS OF COMPUTING AND C PROGRAMMING

(For those who joined in July 2017-2020)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A computer system does not include
   (a) Hardware
   (b) Software
   (c) Peripheral devices
   (d) Router

2. The desktop has several ————————

(a) Application (b) Menu

(c) Programs (d) Icons

3. Which of the following are not tokens in C?

(a) Keywords

(b) Variables

(c) Constants

(d) Pointers

4. Integer Division results in

(a) Rounding the fractional part

(b) Truncating the fractional part

(c) Floating value

(d) An Error is generated

5. What should be the expression return value for a do-while to terminate?

(a) 1 (b) 0

(c) –1 (d) NULL

6. Which among the following is conditional control structure?

(a) do-while (b) if-else

(c) goto (d) for

7. Which of the following is a keyword is used for a storage class?

(a) printf

(b) external

(c) auto

(d) scanf

8. Maximum number of elements in the array declaration int a[5][8] is

(a) 28 (b) 32

(c) 35 (d) 40

9. When the main function is called, it is called with the arguments

(a) argc (b) argv

(c) none of these (d) both (a) and (b)

10. In C, a Union is

(a) memory location

(b) memory store

(c) memory screen

(d) none of these

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) What are the Components of a Personal computer? Explain.

Or

(b) Write a short note on system unit.

12. (a) Write a brief note on C Character Set.

Or

(b) Explain how to read and write a character in C.

13. (a) Explain Simple If Statement with an example.

Or

(b) Write the syntax of conditional operator with an example.

14. (a) What is an array? What are advantages of arrays over ordinary variables? How arrays are declared and initialized?

Or

(b) Write a C Program to find a largest number in an array.

15. (a) Define structure with an example.

Or

(b) How structures are used with in structure? Explain.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Discuss the features of Windows XP.

Or

(b) How to create a shortcut for a program? Explain.

17. (a) Explain briefly the various types of operators in C Language.

Or

(b) Explain the input and output statement in C.

18. (a) Describe while and do-while statement with suitable examples.

Or

(b) Explain the syntax of nested if-else statement.

19. (a) Discuss the Methods of Initializing 1-D and 2-D Array in C.

Or

(b) Explain different type of reading and writing strings in C.

20. (a) What is the scope and life time of variable in function in C?

Or

(b) Differentiate the structure and union in C.

———————

(6 pages)

Reg. No. : .....

Code No. : 10131 E **Sub. Code : SMIT 41/ SMCT 41/AMIT 41/AMCT 41**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Fourth Semester

Information Technology/Computer Science and I.T.

JAVA PROGRAMMING

(For those who joined in July 2017–2020)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. Which of the following primitive data type deals with small integer numbers?

   (a) Boolean (b) String

   (c) int (d) float

2. The _____statement is used to terminate a statement sequence.

(a) break (b) switch

(c) continue (d) wait

3. Which of the following helps in garbage collection?

(a) Final (b) Finally

(c) Finalize (d) Finalizer

4. What is the output of the below Java program?

```
int a=1;
while(a<4)
{
System.outprint(a +"  ";
a++;
}
```

(a) 1 2 3 4 (b) 1 2 3

(c) 6 (d) Complier error

5. A package is a collection of _____

(a) keywords

(b) classes and interfaces

(c) editing tools

(d) views

6. A special type of method that is used to initialize an object is called _____

(a) constructor (b) destructor

(c) modification (d) editor

7. _____ is an abnormal condition that arises in a code sequence at runtime.

(a) Exception (b) Input

(c) Output (d) All the above

8. What is the name of the method used to schedule a thread for execution?

(a) init( ) (b) start ( )

(c) run ( ) (d) resume ( )

9. Which of the following methods are defined on the Graphics class?

(a) add (Component)

(b) draw Line (int, int, int, int)

(c) set Visible (boolean)

(d) setLayout (Object)

10. What is the difference between a TextArea and a TextField?

(a) TextArea can handle multiple lines of text

(b) A textarea can be used for output

(c) TextArea is not a class

(d) TextAreas are used for displaying graphics

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) What is meant by variable? Give an example.

Or

(b) Discuss about switch statement with example.

12. (a) Explain about declaration of object with example.

Or

(b) Discuss about finalize ( ) method with example.

13. (a) Illustrate the abstract class with example.

Or

(b) Elucidate about the import packages

14. (a) Explain about exception types with example.

Or

(b) Discuss Applet display method with example.

15. (a) Illustrate about event classes with an example.

Or

(b) What is meant by TextArea? Give an example

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss about various types of operator with example.

Or

(b) Illustrate about looping statement available in Java.

17. (a) Explain about method overloading with example program.

Or

(b) Elucidate about nested and inner classes.

18. (a) Analyze single inheritance with example program.

Or

(b) Describe about implement and applying interface with example program.

19. (a) Discuss briefly about creating multiple threads with example

Or

(b) Elucidate about output stream with suitable example.

20. (a) Explain about check boxes and check box group with example.

Or

(b) Discuss about layout manager with example program.

———————

(7 pages) **Reg. No. :** .....

Code No. : 10132 E **Sub. Code : SMIT 42/ SMCT 42/AMIT 42/ AMCT 42**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024

Fourth Semester

Information Technology/ Computer Science and I.T. — Core

OPERATIONS SYSTEM

(For those who joined in July 2017-2020)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. An Operating System (OS) IS defined as: ————.
   (a) Software that manages computer hardware resources
   (b) A collection of application software
   (c) The physical components of a computer system
   (d) The user interface of a computer system

2. The main characteristic feature of Desktop Systems is: _____

   (a) High mobility

   (b) Limited Processing power

   (c) High processing power and limited mobility

   (d) Limited storage capacity

3. The necessity of using device drivers in an operating system is _____

   (a) To manage file systems efficiently

   (b) To provide security features

   (c) To allow the operating system to communicate with hardware devices

   (d) To enhance graphical user interfaces

4. A process is ——————.

   (a) A program in execution

   (b) A hardware component

   (c) A device driver

   (d) A file system structure

5. The primary challenge faced in the Producer/consumer problem in IPC is ————————.

(a) Synchronization of processes

(b) Memory allocation

(c) Process termination

(d) CPU scheduling

6. A Deadlock is

(a) A system crash

(b) A situation where a process is terminated

(c) A state in which processes are unable to proceed and each is waiting for a resource held by another

(d) A successful execution of a process

7. In which concept Variable partition memory management differs from fixed partition management?

(a) Processes are allocated equal-sized partitions

(b) Memory partitions can be resized dynamically

(c) Processes are allocated non-contiguous memory blocks

(d) Memory is allocated using segmentation

8. Segmentation in memory management is ————————.

(a) Allocation of memory in fixed-sized segments

(b) Division of memory into equal-sized pages

(c) Allocation of memory in variable-sized segments

(d) Resizing of memory partitions

9. Process management in Linux involves ————————.

(a) Creating and scheduling processes

(b) Handling user authentication

(c) Managing hardware devices

(d) Allocating disk space

10. The default scheduler in Linux is called ————————

(a) Round-robin Scheduler

(b) Priority-based Scheduler

(c) Completely Fair Scheduler (CFS)

(d) First-Come-First-Served Scheduler (FCFS)

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Discuss handheld systems and their significance in modern computing.

Or

(b) Write the role of system calls in an operating system.

12. (a) What is a file system, and what role does it play in an operating system?

Or

(b) Describe the concept of a process and its characteristics.

13. (a) What is the Producer/Consumer problem in Inter Process Communication, and why is it important?

Or

(b) Explain deadlock prevention methods in detail.

14. (a) Explain the concept of single contiguous memory management.

Or

(b) How does fixed partition memory management work? Explain.

15. (a) Discuss the process management in Linux, with its key components?

Or

(b) Write some similarities and differences between UNIX and Linux in detail.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Write the functions of an operating system and discuss its internal structure.

Or

(b) Explain how users perceive the operating system and its significance in their computing experience.

17. (a) What is a Process Control Block (PCB) and what information does it contain?

Or

(b) Define multithreading and discuss its advantages in process management.

18. (a) What are the classical Inter Process Communication (IPC) problems and why are they significant in operating systems?

Or

(b) How are deadlocks represented graphically, and what are the essential components?

19. (a) Describe variable partition memory management and non-contiguous allocation.

Or

(b) What is paging, and how does it work in memory management?

20. (a) Explain how does memory management differ between UNIX and Linux?

Or

(b) What are the key aspects of file management in UNIX and Linux? Explain.

———————

Reg. No. : .....

Code No. : 10137 E **Sub. Code : SMIT 61/ SMCT 61**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Sixth Semester

Information Technology/Computer Science and I.T. – Core

DATA COMMUNICATION AND NETWORKING

(For those who joined in July 2017-2019)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. _____ Topology requires a multipoint connection.
   (a) Star (b) Mesh
   (c) Ring (d) Bus

2. WAN stands for _____.
   (a) World Area Network (b) Wide Area Network
   (c) Web Area Network (d) Web Access Network

3. A communication device that combines transmission from several I/O devices into one line is a _____.

(a) Concentrator (b) Modifier

(c) Multiplexer (d) Full duplex line

4. Which multiplexing technique transmits digital signals?

(a) FDM (b) TDM

(c) WDM (d) None of the above

5. Find parity bit for 1001011

(a) 0 (b) 1

(c) 2 (d) None

6. If value of checksum is 0, then message is

(a) Accepted (b) Rejected

(c) Sent back (d) Resend

7. A switch in a datagram network uses a

(a) Destination address (b) Sender address

(c) Routing table (d) Header

8. ISDN stands for _____.

(a) Integrated Services Digital Network

(b) Integrated Services Discrete Network

(c) Integrated Services Digital Node

(d) Integrated Services Discrete Node

9. There are _____ total features of Frame Relay.

(a) Five (b) Seven

(c) Nine (d) Ten

10. The computation of the shortest path in OSPF is usually done by _____.

(a) Bellman-ford algorithm

(b) Routing information protocol

(c) Dijkstra's algorithm

(d) Distance vector routing

PART B — ($5 \times 5 = 25$ marks)

Answer ALL the questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Discuss about Categories of network.

Or

(b) Write notes on digital data transmission.

12. (a) Write notes on unguided media.

Or

(b) Discuss about Division Multiplexing.

13. (a) What is meant by Redundancy?

Or

(b) Discuss on Error correction.

14. (a) Write notes on circuit Switching Network.

Or

(b) Write down the ISDN Layers.

15. (a) Write about Frame Relay Layers.

Or

(b) What are Gateways?

PART C — (5 × 8 = 40 marks)

Answer ALL the questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Briefly discuss about the Transmission mode.

Or

(b) Explain about DTE.

17. (a) Explain the Multiplexing.

Or

(b) Discuss about the Wave Division Multiplexing.

18. (a) Explain the Longitudinal Redundancy Cheek.

Or

(b) Explain the Flow control.

19. (a) Discuss about the Message Switching Network.

Or

(b) Briefly discuss about the Broadband ISDN.

20. (a) Explain about Frame Layer operation.

Or

(b) Explain the distance vector routing.

———————

Reg. No. : .....

(6 pages)

Code No. : 10138 E **Sub. Code : SMIT 62/ SMCT 62**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024

Sixth Semester

Information Technology/Computer Science and I.T – Core

MULTIMEDIA TECHNOLOGY

(For those who joined in July 2017-2019)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. UCS stands for.
   (a) Universal color set
   (b) Universal character set
   (c) Universal color standard
   (d) Unique color set

2. The sampling frequency that is half that of the input wave frequency is referred to a _____.

   (a) Aliasing

   (b) Quantization

   (c) Nyquist frequency

   (d) Sampling

3. _____ format support cmyk, RGB and gray scale color model

   (a) BMP

   (b) Jpeg

   (c) Gif

   (d) PNG

4. _____ images uses only two colors.

   (a) Bitonal

   (b) Halftone

   (c) Partial tone

   (d) Continuous tone

5. _____ amplifies are less than half of the input cycle for amplification.

   (a) Class-B

   (b) Class-D

   (c) Class-E

   (d) Class-C

6. _____is the branch of science dealing with the study of sound

(a) Acoustics

(b) Biometrics

(c) Linguistics

(d) Auditory

7. In which chrome sub sampling scheme there is no loss in color component.

(a) 4:2:2

(b) 4:1:1

(c) 4:4:4

(d) 4:2:0

8. The _____ component describes the variation of color information in different parts of the image without regard to any brightness information

(a) Chrominance

(b) Luminance

(c) Saturation

(d) Perception

9. _____ implies changing the orientation of an object by rotating it through some angles.

(a) Moving

(b) Translation

(c) Scaling

(d) Rotation

10. _____ animation is also called sprite animation

(a) Cel animation algorithm

(b) Path animation

(c) 2D animation

(d) 3D animation

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) List out the characteristics of a multimedia presentation.

Or

(b) Discuss different types of text.

12. (a) What is scanner Explain types of scanner?

Or

(b) Write about the specification of defile image.pt

13. (a) Explain the basics of staff Notation.

Or

(b) List out the basic components of sound card

14. (a) Write short notes on video file format and codes.

Or

(b) Discuss video capture software.

15. (a) Explain.

(i) Cel animation algorithm.

(ii) Path animation algorithm.

Or

(b) Explain.

(i) Ray carting algorithm.

(ii) Sub division algorithm.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 600 words.

16. (a) (i) Explain hardware and software requirement of multimedia.

(ii) Explain Digital to analog conversion.

Or

(b) (i) Explain different file format in text.

(ii) Explain the insertion of text.

17. (a) (i) Explain RGB model.

(ii) Explain image types.

Or

(b) (i) How the Laser printer work?

(ii) Discuss different file format in image.

18. (a) What is microphone explain types of microphone?

Or

(b) Explain audio processing software.

19. (a) (i) Explain different video signal format.

(ii) Explain chrome sub sampling.

Or

(b) Explain video recording formats and system.

20. (a) Discuss about the principles of animation.

Or

(b) List out and discuss the parts of Mpeq 2 standards.

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Reg. No. : .....

Code No. : 10139 E **Sub. Code : SMIT 63/ SMCT 63/AMIT 63/ AMCT 63**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Sixth Semester

Information Technology / Computer Science and I.T — Core

.NET PROGRAMMING

(For those who joined in July 2017 – 2020)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which is known as group of constants?

   (a) Enumeration (b) Set

   (c) Group (d) Collections

2. Which is used to store information about an object?

   (a) Records (b) Data

   (c) Properties (d) None of the above

3. The HTML tag used to represent <HTML Anchor> is _____.

(a) <href> (b) <anchor>

(c) <ar> (d) <a>

4. Which control is used to trigger an event when it is pressed?

(a) Label box (b) Picture

(c) Button (d) Trigger

5. What is used to store user specific information?

(a) Cookies (b) State

(c) Links (d) Data

6. What process is used to display diagnostic information?

(a) Paging (b) Correction

(c) Tracing (d) All the above

7. Any component that can read _____ format can also process data.

(a) .exe (b) XML

(c) XHTML (d) CSS

8. Which is acting as a bridge between front end controls and backend database?

(a) driver (b) connection

(c) ADO.NET (d) query

9. Which one ensures the data is properly interpreted or not?

(a) XML (b) XSL

(c) XHTML (d) XSD

10. What is known as a way to interface internet objects?

(a) IOT (b) Web services

(c) CSS (d) Gateway

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Explain different datatypes with examples.

Or

(b) Write about value types and reference types.

12. (a) What is a page class? Write its member classes.

Or

(b) Explain Fonts class with examples.

13. (a) Explain Session tracking in session state with an example.

Or

(b) List out the common errors.

14. (a) Explain ADO .NET object model.

Or

(b) Discuss SQL select statement in detail.

15. (a) Write about the role of XML in .NET.

Or

(b) How will you validate an XML file? Discuss.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) How will you declare variables? Discuss.

Or

(b) What do you mean by class, properties and methods?

17. (a) Create a simple webpage applet.

Or

(b) Explain the validation process and its controls.

18. (a) What is meant by cookies? Explain with examples.

Or

(b) Write about handling exceptions in detail.

19. (a) How a connection is created? Explain.

Or

(b) Compare Data List and Data Grid.

20. (a) Write about XML Text Writer and XML Text Reader.

Or

(b) Discuss ASP .NET security model.

———————

(7 pages)

Reg. No. : .....

Code No. : 10141 E **Sub. Code : SAIT 21/ SACT 21/AAIT 21/ AACT 21**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Second Semester

Information Technology/Computer and Information Technology — Allied

DIGITAL DESIGN

(For those who joined in July 2017–2020)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. The complement of the complement for the number N is.

(a) $r^n - N$ (b) N

(c) $N - r^n$ (d) $\left(2^n - 1\right) - N$

2. What is the decimal equivalent for the binary number $(110101)_2$?

(a) 50 (b) 51

(c) 52 (d) 53

3. For n binary variables, one can obtain _____distinct minterms.

(a) 2^{2n} (b) 2^n

(c) 2^{n-1} (d) $2^n - 1$

4. What is the expansion of TTL?

(a) Transistor-Transistor Logic

(b) Transistor-Translator Logic

(c) Transistor-Temporary Logic

(d) Transistor-Test Logic

5. _____ operation is the dual of the NAND operation.

(a) AND (b) OR

(c) NOR (d) NOT

6. $X \oplus X' = ?$

(a) 1 (b) 0

(c) X' (d) X

7. An encoder has 2^n input lines and _____ output lines.

(a) 2^n (b) n

(c) $2n$ (d) n^2

8. The storage elements are devices capable of storing _____ information.

(a) Digital (b) Binary

(c) Bitwise (d) Logical

9. The serial output is taken from the output of the _____flip-flop.

(a) Leftmost (b) Left

(c) Right (d) Rightmost

10. A memory unit is a collection of _____capable of storing a large quantity of binary information.

(a) Chips (b) Gates

(c) Cells (d) Bits

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, by choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) (i) Convert decimal 35.4375 to binary

(ii) Obtain the 1's complement and 2's complement of 01111110.

Or

(b) Simplify the following

(i) $xy + xy'$

(ii) $xyz + x'y + xyz'$

12. (a) Express the Boolean function $F = xy + x'z$ in sum of minterms and product of maxterms.

Or

(b) Simplify the Boolean function using Karnaugh Map $F(w, x, y, z) = \sum(2,3,12,13,14,15)$

13. (a) With neat block diagram explain the working principle of a 4-bit binary adder.

Or

(b) Design a half adder circuit with inputs x and y and outputs S and C.

14. (a) Design a combinational logic circuit for a 4 input priority encoder.

Or

(b) Write notes on Mealy and Moore models.

15. (a) Design a serial adder with shift register and explain it.

Or

(b) What are the types of ROMs?

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions by choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) (i) Given two binary numbers X=1010100 and Y=1000011 perform the subtraction X-Y and Y-X using 2's complement method.

(ii) Convert $(41.6875)_{10}$ to binary.

Or

(b) (i) State and prove De Morgan's and absorption theorem.

(ii) Find the complement of the functions $F_1 = x'yz' + x'y'z$ and $F_2 = x(y'z' + yz)$.

17. (a) (i) Express the Boolean function $F = A + B'C$ in sum of minterms and product of maxterms.

(ii) Write notes on multiple input and cascated NOR and NAND gates.

Or

(b) Implement the following Boolean function F together with the don't care condition d using NAND gates.

$$F(A,B,C,D) = \sum(0,1,2,9,11)$$

$$d(A,B,C,D) = \sum(8,10,14,15)$$

18. (a) Derive the circuit for parity generator and checker using odd parity bit.

Or

(b) Design a combinational circuit that compares two 4-bit numbers to check if they are equal. The circuit output is equal to one if two numbers are equal and zero otherwise.

19. (a) (i) Design a 4×16 decoder using two 3×8 decoder.

(ii) Implement the Boolean function $F(A, B, C, D) = \sum(1,3,4,11,12,13,14,15)$ using 8×1 multiplexer.

Or

(b) With a neat example explain the steps involved in the analysis of clocked sequential circuit.

20. (a) Design a 3-bit synchronous counter with JK-flip flop.

Or

(b) Explain how error detection and error correction was performed using humming codes with example.

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(6 pages) **Reg. No. :** .....

Code No. : 10145 E **Sub. Code : SNIT 4 A/ SNCT 4 A/ANIT 41/ ANCT 41**

U.G. (CBCS) DEGREE EXAMINATION, APRIL 2024

Fourth Semester

Information Technology/Computer Science and I.T. — Non–Major Elective

BASIC PROGRAMMING DESIGN

(For those who joined in July 2017–2019)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. When variable used in program is whole number, variable is stored as?
   (a) fixed string
   (b) integers
   (c) negative whole numbers
   (d) positive whole numbers

2. To made program more easier to understand, programmers can

   (a) add comments to it

   (b) declare variable names

   (c) use secure data

   (d) both (a) and (b)

3. A detailed flowchart is called _____.

   (a) Stack (b) Macro

   (c) Micro (d) Union

4. Which of the following is not an advantage of a flowchart?

   (a) Better communication

   (b) Efficient coding

   (c) Systematic testing

   (d) Improper documentation

5. A _____is diagram that depicts the flow of a program.

   (a) Algorithm (b) Hash Table

   (c) Graph (d) Flowchart

6. The operation represented by parallelograms.

   (a) Input/output (b) Assignment

   (c) Comparison (d) Conditions

7. A program that can execute high-level language programs.

(a) Compiler (b) Interpreter

(c) Sensor (d) Circuitry

8. Executable might be called _____.

(a) native code (b) executable code

(c) complex code (d) machine code

9. What is the dimension of the C array int ary [10][5]?

(a) 1 (b) 2

(c) 5 (d) 10

10. What is the dimension of the below C Array?

int ary [ ] = {1,3,5,7};

(a) 1 (b) 2

(c) 3 (d) 5

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choose either (a) or (b).

Each answer should not exceed 250 words.

11. (a) How to write an algorithm? Explain.

Or

(b) Describe basic steps needed to develop a program.

12. (a) Explain about constants in programming languages.

Or

(b) List out the rules for creation of variables.

13. (a) Draw the flowchart to find area of square.

Or

(b) Draw the flowchart to find area of Rectangle.

14. (a) Explain the initialization of one dimensional array.

Or

(b) Draw a flowchart to find maximum of 'n' numbers.

15. (a) What is structure of the file?

Or

(b) Illustrate the file organization methods.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions choose either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Write Advantages of flowchart.

Or

(b) What is Programming language? Explain its types.

17. (a) What is Flowchart? Mention the merits of Flowchart.

Or

(b) Draw symbols used in flowchart.

18. (a) Draw the flowchart to find factorial of a given number.

Or

(b) Draw the flowchart to find Multiplication table of given number.

19. (a) What is an array? How to declare the one dimensional array? Explain.

Or

(b) How to access an array? Explain with an example.

20. (a) Describe the matrix operations in detail.

Or

(b) What is the purpose of data files? Explain its types.

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(6 pages)

Reg. No. : .....

Code No. : 10152 E **Sub. Code : SEIT 6 A/ SECT 6 A**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Sixth Semester

Information Technology/Computer Science and IT

Major Elective — WEB PROGRAMMING

(For those who joined in July 2017-2019)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. XML uses ———— to encode characters.

(a) Byte code (b) ASCII code

(c) Unicode (d) None

2. XSL stands for

   (a) Extensible style sheet language

   (b) Extension standard language

   (c) Excessive style language

   (d) None

3. Which of the following is an advantage of using JavaScript?

   (a) Less server interaction

   (b) Immediate feedback to the visitors

   (c) Increased interactivity

   (d) All

4. Which of the following function of array object returns a string representing the array and its elements?

   (a) tosource( ) (b) sort( )

   (c) splice( ) (d) tostring( )

5. Which statement in true in XML?

   (a) All the statements are true

   (b) All XML elements must have a closing tag

   (c) All XML elements must be lower case

   (d) All XML documents must have a DTD

6. Well formed XML documents means

(a) it contains a root element

(b) it contain an element

(c) it contains one or more elements

(d) must contain one or more elements and root element must contain all other elements

7. How can you define DTD in XHTML?

(a) Strict DTD (b) Transitional DTD

(c) Frameset DTD (d) All of the above

8. Which of the following function of string object causes a string to be displayed as a superscript, as if it were in a <sup> tag?

(a) sup( ) (b) small( )

(c) strike( ) (d) sub( )

9. In simple type built into XML schema Boolean type holds

(a) True, false (b) 1, 0

(c) Both (d) None

10. The XSL formatting object use to format a list is

(a) list-block (b) list-item

(c) list-item-body (d) list-item-label

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) What is meant by widgets and gadgets?

Or

(b) Explain about search engines.

12. (a) Explain the structure of XHTML document.

Or

(b) How to design a web page? Explain with example.

13. (a) What is JavaScript? Explain about it.

Or

(b) Explain the recursive function in JavaScript with example.

14. (a) What are XML rules? Explain about it.

Or

(b) How to declare multidimensional arrays in JavaScript?

15. (a) Write about HTTP transactions.

Or

(b) Write a short notes on PHP.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) What are the differences between HTML and XML? Explain.

Or

(b) Briefly discuss about Blogging.

17. (a) Explain the following :

(i) External style sheet

(ii) User style sheets.

Or

(b) How to design frames in XHTML? Explain.

18. (a) Explain the looping structures in JavaScript.

Or

(b) Define XHTML and write about the uses of XHTML.

19. (a) Write about the various operators available in JavaScript.

Or

(b) Explain about DTD.

20. (a) What are the three essential parts to website development?

Or

(b) Write about web servers and web controls.

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(6 pages) **Reg. No. :** .....

Code No. : 10329 E **Sub. Code : AMCS 41**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Fourth Semester

Computer Science – Core

DATA STRUCTURES

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The definition of an array in modern programming languages requires all of its elements to be of the _____.

   (a) different type

   (b) heterogeneous type

   (c) varying type

   (d) same type

2. A matrix is _____ if a large number of its elements are Zero.

(a) Sparse (b) Unit

(c) Identity (d) Symmetric

3. A stack is a linear data structure in which insertion and deletion of elements are done at only one end, which is known as the

(a) front (b) rear

(c) top (d) node

4. The elements in a queue are added at one end called the

(a) bottom (b) middle

(c) median (d) rear

5. Which type of traversal of binary search tree outputs the value in sorted order?

(a) Pre-order (b) In-order

(c) Post-order (d) Linear

6. Sequential representation of binary tree uses

(a) Array with pointers

(b) Singed linear array

(c) Two dimensional arrays

(d) Three dimensional arrays

7. The Data structure used in standard implementation of Breadth First Search is?

   (a) Stack

   (b) Queue

   (c) Linked List

   (d) Tree

8. Graphs are represented using _____

   (a) Adjacency tree

   (b) Adjacency linked list

   (c) Adjacency graph

   (d) Adjacency queue

9. The function uses this key and generates the unique index corresponding to that value in the

   (a) Symbol Table

   (b) Disjoint set

   (c) Tree

   (d) Hash table

10. Heap sort utilize the _____ structure.

   (a) min-heap

   (b) priority queue

   (c) max-heap

   (d) circular queue

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) List out the criteria for algorithm specification.

Or

(b) Comment on Abstract Data types and Array.

12. (a) Illustrate the Singly Linked list creation with an example.

Or

(b) Explain the Insertion and deletion operations in Queue.

13. (a) Deliberate the properties of Binary trees.

Or

(b) How to define a priority queue? Explain.

14. (a) Explain the term vertex, edge, adjacency and path in Graph.

Or

(b) Demonstrate the minimum spanning tree with an algorithm.

15. (a) Write an algorithm to perform Insertion sort.

Or

(b) Establish the hash table with an example.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, by choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Demonstrate the algorithm for addition of two polynomial numbers.

Or

(b) Elaborate the performance analysis of an algorithm.

17. (a) Describe the Stack operations using array with an example.

Or

(b) How to perform insertion and deletion operations in doubly linked lists? Explain.

18. (a) Explain the Binary tree traversal Algorithm with an example.

Or

(b) Illustrate the Algorithm to Insert an element into Binary search Tree.

19. (a) Discuss the Depth First search algorithm with an example.

Or

(b) Explain the kruskal's algorithm with suitable example.

20. (a) Characterize the popular Hash Functions with an example.

Or

(b) Discuss the Quick sort algorithm with suitable example.

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Reg. No. : .....

(6 pages)

Code No. : 10330E **Sub. Code : AMCS 42**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Fourth Semester

Computer Science – Core

COMPUTER ARCHITECTURE

(For those who joined in July 2020 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer:

1. Which of the following is a group of bits that tells the computer to perform a particular operation?

   (a) Accumulator

   (b) Register

   (c) Instruction code

   (d) None of the above

2. The controller multiplexes the addresses after getting the _____ signal.
   (a) INTR
   (b) ACK
   (c) RESET
   (d) Request
3. The two phases of executing an instruction are
   (a) Instruction decoding and storage
   (b) Instruction fetch and instruction execution
   (c) Instruction execution and storage
   (d) Instruction fetch and Instruction processing
4. The addressing mode/s, which uses the PC instead of a general purpose register is _____.
   (a) Indexed with offset
   (b) Relative
   (c) Direct
   (d) Both Indexed with offset and direct
5. Which of the following is used for binary multiplication?
   (a) Restoring Multiplication
   (b) Booth's Algorithm
   (c) Pascal's Rule
   (d) Digit-by-digit multiplication

6. Subtraction in computers is carried out by _____.

(a) 1's Complement

(b) 2's Complement

(c) 3's Complement

(d) 4's Complement

7. The interrupt-request line is a part of the _____.

(a) Data line

(b) Control line

(c) Address line

(d) None of the

8. Which of the following is a type of interrupt?

(a) I/O interrupt

(b) Program Interrupt

(c) Hardware/power failure

(d) All of the above

9. What memory is called separation of user logical memory and physical memory?

(a) Memory sharing

(b) Virtual memory

(c) Memory management

(d) Memory control

10. The DMA transfers are performed by a control circuit called as _____.

(a) Device interface

(b) DMA controller

(c) Data controller

(d) Overlooker

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Describe the Instruction set Architecture of simple computer.

Or

(b) List and explain Registers for the Basic Computer.

12. (a) Write note on

(i) Three address instruction.

(ii) Two address instruction.

Or

(b) How the memory stack organization works?

13. (a) (i) What is the binary addition of 1010, 1110?

(ii) Substraction of 1100 and 0111.

Or

(b) Hardware implementation and algorithm for division.

14. (a) How data transfer from IO device CPU takes place in a computer?

Or

(b) Define priority interrupts. Discuss the methods of priority interrupt.

15. (a) Brief out the hardware organization of associative memory.

Or

(b) How Cache memory works? Explain.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Elaborate the control unit with block diagram

Or

(b) Write note on address sequencing.

17. (a) Draw and explain the Schematic of general register organization.

Or

(b) Explain in detail about addressing modes.

18. (a) Draw and explain the flowchart for add and subtraction algorithm.

Or

(b) Write in details about BOOTH multiplication algorithm.

19. (a) Describe about Handshaking.

Or

(b) Elaborate DMA controller and its mode of data transfer.

20. (a) Illustrate the memory hierarchy.

Or

(b) Discuss about virtual memory organization.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10331 E **Sub. Code : AMCS 51**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Fifth Semester

Computer Science – Core

RELATIONAL DATABASE MANAGEMENT SYSTEMS

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL the questions.

Choose the correct answer :

1. _____ needs different application programs to extract records from, and add records to, the appropriate files.

(a) FPS (b) DBMS

(c) SPF (d) FMS

2. A _____ of possible values must be associated with every attribute

(a) Integrity (b) Assertions

(c) Domain (d) Constraints

3. A relational database consists of a collection of _____.

(a) Tables (b) Objects

(c) Entity (d) Data

4. A _____ is a pictorial depiction of the schema of a database that shows the relations in the database, their attributes and primary keys and foreign keys.

(a) Relational Model

(b) Schema Diagram

(c) Schema Chart

(d) Flow Chart

5. The SQL _____ provides the ability to query information from the database and to insert tuples into, delete tuples from and modify tuples in the database.

(a) DDL (b) DCL

(c) DML (d) None of the above

6. Which of the following is known as a set of entities of the same type that share same properties, or attributes?

   (a) Relation set

   (b) Tuples

   (c) Entity set

   (d) Entity Relation model

7. Which command is used to remove a relation from an SQL?

   (a) Drop table (b) Delete

   (c) Purge (d) Remove

8. Which normalization from is based on the transitive dependency?

   (a) 1NF (b) 2NF

   (c) 3NF (d) BCNF

9. In SQL, which command is used to select only one copy of each set of duplicable rows

   (a) SELECT DISTINCT

   (b) SELECT UNIQUE

   (c) SELECT DIFFERENT

   (d) SELECT NULL

10. Which of the following is the full form of DDL?

(a) Data definition language

(b) Data derivation language

(c) Dynamic data language

(d) Detailed data language

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) State the Meaning and scope of RDBMS.

Or

(b) Describe Domain Constraints and Referential Integrity.

12. (a) Write short notes on Relation, Tuple, Attributes and Domain.

Or

(b) Discuss about Schema Diagram.

13. (a) Differentiate Char with Varchar.

Or

(b) List out the advantages of Views.

14. (a) Discuss about Transitive Dependency.

Or

(b) Explain the Features of EER Model.

15. (a) Discuss about Create Statement in Oracle.

Or

(b) Mention the Advantages of PL/SQL Procedures.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Elaborate the Purpose of DBMS.

Or

(b) Discuss about the Database Architecture.

17. (a) Describe Cartesian product with an Example.

Or

(b) Discuss about DDL SQL Queries.

18. (a) Write detail notes on Set Operations.

Or

(b) Discuss about Various Data types used in DBMS.

19. (a) Compare Specialization and Generalization.

Or

(b) Discuss about the Normalization Types.

20. (a) Mention the different ways to Alter or Modify the Table in Oracle.

Or

(b) Discuss about the Features of PL/SQL functions.

———————

Reg. No. : .....

Code No. : 10332 E **Sub. Code : AMCS 53**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024.

Fifth Semester

Computer Science — Core

PHP AND MySQL

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which of the following is the correct syntax to write a PHP code?

   (a) <?php?> (b) < php >

   (c) < ? php > (d) < ? ? >

2. Which of the following is the default file extension of PHP files?

   (a) .php (b) .ph

   (c) .xml (d) .html

3. How to define a function in PHP?

   (a) functionName(parameters) {function body}

   (b) function {function body}

   (c) function functionName (parameters) {function body}

   (d) data type functionName (parameters) {function body}

4. Which loop statement is used to loop through a block of code a specified number of times?

   (a) while (b) do...while

   (c) for (d) foreach

5. Which PHP function reads a single line from a file?

   (a) readline ( ) (b) getline ( )

   (c) fget ( ) (d) fgets( )

6. Which PHP function reads a single character from a file?

   (a) readcharacter ( ) (b) getchar ( )

   (c) fgetc ( ) (d) fchars ( )

7. Which type of database management system is MySQL?

   (a) Object-oriented (b) Hierarchical

   (c) Relational (d) Network

8. Which keyword is used to create a database?

   (a) CREATE (b) SET

   (c) SETUP (d) LINK

9. Which statement makes changes to the databases global attributes?

(a) CHANGE (b) ALTER

(c) ALTERNATE (d) UPDATE

10. The default storage engine used is _____

(a) EXAMPLE (b) ARCHIVE

(c) MyISAM (d) NDB

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) What is PHP? And what is a PHP File? Explain.

Or

(b) Explain the PHP Variables Scope.

12. (a) How to Create a User Defined Function in PHP?–Explain.

Or

(b) Explain about an Array.

13. (a) Explain the Methods of Writing a File in PHP.

Or

(b) How to delete a file in PHP? — Explain.

14. (a) What is a Database?–Explain.

Or

(b) Discuss about Group By Clause in MySQL.

15. (a) What is the use of mysqli_error()?–Explain.

Or

(b) Discuss about PHP's character type function to check the character.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain the PHP Features.

Or

(b) Write detail notes on PHP Data Types.

17. (a) Explain about the PHP Functions returning value.

Or

(b) Write detail notes on Types of Arrays in PHP.

18. (a) Discuss about Various File Opening Modes in PHP.

Or

(b) Write an Essay on Cookies and Sessions.

19. (a) Discuss about a Relational DataBase Management System (RDBMS).

Or

(b) Write detail notes MySQL JOINS.

20. (a) Discuss about Debugging and diagnostic functions.

Or

(b) Write detail notes on Altering String Case in PHP and MySQL.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10333 E **Sub. Code : AMCS 62**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Sixth Semester

Computer Science – Core

SOFTWARE ENGINEERING AND TESTING

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer:

1. A ———————— is developed according to the specification draw up by one or at most a few customers

   (a) Customized software

   (b) Application software

   (c) System software

   (d) None

2. What does RAD stand for?

(a) Rapid Application Document

(b) Rapid Application Development

(c) Relative Application Development

(d) None

3. The simplest metrics available to measure project size is ————————

(a) LOC (b) FP

(c) Both (d) None

4. Which is the most important document and toughest to write?

(a) SDD (b) SRS

(c) STD (d) All

5. A notation that is widely being used for procedural development is ————————

(a) Flow chart (b) Gant chart

(c) Structured chart (d) All

6. A ———————— lists all the data items that appear in a DFD model

(a) Database (b) Data Dictionary

(c) Directory (d) All

7. Mobile phones uses ———————— menu.

(a) Hierarchical menu

(b) Scrolling menu

(c) Walking menu

(d) All

8. User's manual is an examples for ————————

(a) Internal documentation

(b) External documentation

(c) Both

(d) None

9. The ———————— of a software product denote its trustworthiness

(a) Reliability (b) Portability

(c) Security (d) Scalability

10. ———————— metrics help to measure the characteristics of a product being developed

(a) Product (b) Process

(c) Both (d) None

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain the various types of software development projects.

Or

(b) Illustrate the application of classical waterfall model with a neat diagram.

12. (a) List out the responsibilities of a software project manager.

Or

(b) What are the activities performed by a project manager during project planning.

13. (a) Explain the outcome of the design process.

Or

(b) What are the basic building blocks of a structures charts.

14. (a) Explain the concepts of user guidance and on-line help system.

Or

(b) Discuss the activities of testing.

15. (a) List out the software qualify factors. Explain.

Or

(b) Explain the stages in getting ISO 9000 certification.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 600 words.

16. (a) Describe the programming experience is the emergence of software engineering.

Or

(b) Explain V- model in detail.

17. (a) Explain the factors contributing to the complexity of managing a software project.

Or

(b) Describe the activities of requirements gathering

18. (a) How to characterize a good software design?

Or

(b) Explain structured design and structured analysis in brief.

19. (a) List out the characteristics of a good user interface and explain.

Or

(b) Explain the different types of widgets.

20. (a) Describe the reliability metrics of software products.

Or

(b) Explain software quality management system in detail.

———————

Reg. No. : .....

Code No. : 10334 E **Sub. Code : AMCS 63**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024.

Sixth Semester

Computer Science – Core

COMPUTER GRAPHICS AND VISUALISATION

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 0 marks)

Answer ALL questions.

Choose the correct answer :

1. What is the objective of a graphical system?
   (a) High quality graphics
   (b) Process at high speed
   (c) Display with good aspect ratio
   (d) Digitization

2. Which denotes the number of pixels per unit length on a scan line?
   (a) Persistence (b) aspect ratio
   (c) Resolution (d) Spot intensity

3. Which algorithm reduces time complexities of scan conversion?

(a) Polynomial (b) DDA

(c) Bresenham (d) Midpoint

4. Solid area means _____

(a) Set of vertices

(b) Closed object surface

(c) Set of edges

(d) Random scan display

5. Which is applied to an object by repositioning it along a straight–line path?

(a) Translation (b) Reflection

(c) Rotation (d) Scaling

6. Which transformation produces distortion in the shape of the object?

(a) Translation (b) Rotation

(c) Reflection (d) Shear

7. The coordinate system of window is called _____ coordinate

(a) World (b) Device

(c) Viewport (d) Normalization

8. Which clipping algorithm is used when window is an arbitrary shaped polygon?

(a) Cohen-Sutherland

(b) Parametric

(c) Sutherland Hodgeman

(d) Liang Barsky

9. In which method pixel-by pixel approach is used?

(a) Back face removal (b) D-buffer

(c) Painter (d) Dot product

10. Hidden surface problem relies on a device called _____

(a) C buffer (b) Y buffer

(c) X buffer (d) Z buffer

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write a note on graphics software.

Or

(b) Write DDA algorithm.

12. (a) Write a note on line attributes.

Or

(b) Explain fixed pivot point scaling.

13. (a) Explain viewing coordinate reference frame.

Or

(b) Explain two dimensional viewing function.

14. (a) Write a note on input functions.

Or

(b) Explain three dimensional scaling.

15. (a) Explain viewing pipeline.

Or

(b) Explain Z buffer algorithm.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Give an account of input devices.

Or

(b) Describe midpoint circle algorithm.

17. (a) Explain character attributes.

Or

(b) Explain Reflection.

18. (a) Explain window to viewport coordinate transformation.

Or

(b) Explain Sutherland Hodgeman Polygon clipping.

19. (a) Explain three dimensional display methods.

Or

(b) Explain three dimensional rotation.

20. (a) Briefly describe parallel projection.

Or

(b) Write about RGB color model.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10335 E **Sub. Code : AMCS 64**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024

Sixth Semester

Computer Science – Core

INTRODUCTION TO DIGITAL IMAGE PROCESSING

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which gives a measure of the degree to which a pure color is diluted by white light?

(a) Saturation (b) Hue

(c) Intensity (d) Brightness

2. What is pixel?

(a) Elements of a digital image

(b) Elements of an analog image

(c) Cluster of a digital image

(d) Cluster of an analog image

3. Which is the first and foremost steps in image processing?

(a) Image Restoration (b) Image Enhancement

(c) Image Acquisition (d) Segmentation

4. The transition between continuous values of the image function and its digital equivalent is called _____.

(a) Quantisation (b) Sampling

(c) Rasterisation (d) None

5. At what points, a continous image is digitized?

(a) Sampling (b) Vertex

(c) Contour (d) Random

6. The color that possess the longest wavelength in the visible spectrum is spectrum is _____.

(a) Yellow (b) Blue

(c) Red (d) Green

7. The real-world application of image subtraction is _____.

(a) MRI scan

(b) CT scan

(c) Mask Mode Radiography

(d) None

8. The process of reducing the amount of data requirement to represent a given information is _____.

(a) Compression (b) Segmentation

(c) Filtering (d) None

9. _____ assigns fixed-length code words to variable length sequences of source symbols.

(a) Huffman coding (b) Arithmetic coding

(c) LZW coding (d) Golomb coding

10. _____ smoothes the contour of an object.

(a) Opening (b) Closing

(c) Duality (d) None

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Define Digital Image processing. Give examples.

Or

(b) Explain Image acquisition in detail.

12. (a) Explain histogram equalization in detail.

Or

(b) Describe the basics of filtering in the frequency domain.

13. (a) Explain the different color models in detail.

Or

(b) Describe image segmentation on color.

14. (a) What is image compression? Explain the coding redundancies in image compression

Or

(b) Describe opening and closing operation in morphological image processing.

15. (a) Explain feature extraction attributes in detail.

Or

(b) Describe region-based segmentation in detail.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 600 words.

16. (a) What is digital image processing? List out the steps in it and explain.

Or

(b) Illustrate the components of a image processing system with a neat diagram.

17. (a) What is the use of low pass filters in digital image processing? Explain.

Or

(b) Explain the transformation functions in spatial filtering.

18. (a) How will you smooth and sharpen a color image?

Or

(b) What is pseudocolor image processing? Explain.

19. (a) With a neat diagram, explain image compression model.

Or

(b) Describe the process of erosion and dilation in morphological image processing.

20. (a) Describe the concept of thresholding in segmentation.

Or

(b) What is feature extraction? Explain in detail.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10337 E **Sub. Code : AACS 41**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Fourth Semester

Computer Science – Allied

MACHINE LEARNING

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Machine learning is a subset of ————————

   (a) Deep Learning

   (b) Artificial Intelligence

   (c) Data Learning

   (d) Java

2. A Machine learning technique that helps in detecting the outliers in data

   (a) Clustering

   (b) Classification

   (c) Anamoly Detection

   (d) Partition

3. If machine learning model output involves target variable then that model is called as ————————

   (a) Descriptive model

   (b) Predictive model

   (c) Reinforcement learning

   (d) Impeditive model

4. What type of learning labeled training data is used ————————

   (a) Unsupervised learning

   (b) Supervised learning

   (c) Reinforcement learning

   (d) Active learning

5. You are given reviews of few netflix series marked as positive, negative and neutral. Classifying reviews of a new netflix series is an example of ————————

   (a) Supervised learning

   (b) Unsupervised learning

   (c) Semisupervised learning

   (d) Reinforcement learning

6. The output of training process in machine learning is ————————

(a) Machine learning model

(b) Machine learning algorithm

(c) Null

(d) Accuracy

7. In linear regression, we try to ———————— the least square errors of the model to identify the line of best fit

(a) Minimize (b) Maximize

(c) Change (d) High

8. Common classes of problems in machine learning is ————————

(a) Clustering (b) Regression

(c) Classification (d) All of the above

9. Which of the following is a not numerical function in the various function representation of machine learning?

(a) Neural Network

(b) Support Vector Machines

(c) Case-based

(d) Linear Regression

10. Machine learning algorithms build a model based on sample data, known as ————————

(a) Training Data (b) Transfer Data

(c) Data Training (d) Data Testing

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Summarize the features of artificial intelligence.

Or

(b) Explain the concept of machine learning.

12. (a) How is classification used in machine learning? Explain.

Or

(b) Distinguish between the training data and test data.

13. (a) Elaborate the test data used in support vector machines.

Or

(b) Describe the support vector machine combined with K-Nearest neighbors.

14. (a) What are the advantages of decision trees? Explain.

Or

(b) Point out the steps to build a basic Naive Bayes Model in Python.

15. (a) Why do we use clustering in machine learning?

Or

(b) Mention the applications of K-Means clustering algorithm.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) What are the methods used in Hands-on data visualization With Python? Explain.

Or

(b) How is a panda different from Data Frame?

17. (a) Compare the linear regression and logistic regression in machine learning.

Or

(b) How does the gradient descent algorithm work in machine learning? Describe.

18. (a) Discuss the implementation of data normalization in support vector machines.

Or

(b) Write an algorithm for K-Nearest Neighbors with example.

19. (a) Elaborate the python implementation of the Naïve Bayes algorithm.

Or

(b) Illustrate the implementation for decision trees with diagram.

20. (a) How does the K-Means clustering algorithm work?

Or

(b) Compare the machine learning and data science.

———————

(7 pages) **Reg. No. :** .....

Code No. : 10338 E **Sub. Code : ASCS 31**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Third Semester

Computer Science — Skill Based Subject

INTRODUCTION TO BIG DATA ANALYTICS

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Data in ———————— bytes size is called Big Data.

   (a) Tera

   (b) Giga

   (c) Peta

   (d) Meta

2. In Big Data environment, Veracity of data refers _____

(a) Quality or fidelity of data

(b) Large size of the data that cannot be process

(c) Small size of the data that can easily process

(d) All of the mentioned

3. Which of the following are benefits of Big Data processing?

(a) Cost Reduction

(b) Time Reductions

(c) Smarter Business Decisions

(d) All of the mentioned

4. _____ is the supporting physical infrastructure is fundamental to the operation and scalability of big data architecture.

(a) Redundant physical infrastructure

(b) Integrated System

(c) Integrated Database

(d) Integrated Data

5. According to analysts, for what can traditional IT systems provide a foundation when they're integrated with big data technologies like Hadoop?

   (a) Big data management and data mining

   (b) Data warehousing and business intelligence

   (c) Management of Hadoop clusters

   (d) Collecting and storing unstructured data

6. The new source of big data that will trigger a Big Data revolution in the years to come is

   (a) Business transactions

   (b) Social media

   (c) Transactional data and sensor data

   (d) RDBMS

7. Listed below are the three steps that are followed to deploy a Big Data Solution except

   (a) Data Ingestion

   (b) Data Processing

   (c) Data dissemination

   (d) Data Storage

8. Check below the best answer to "which industries employ the use of so-called "Big Data" in their day to day operations?

(a) Weather forecasting

(b) Marketing

(c) Healthcare

(d) All of the above

9. ———————— is the slave/worker node and holds the user data in the form of Data Blocks.

(a) DataNode (b) NameNode

(c) Data block (d) Replication

10. Big data analytics is usually associated with ———————— services.

(a) decision support

(b) office support

(c) data warehouse

(d) management information

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Elaborate the basic concepts of big data.

Or

(b) What are the ways to improving decision making in big data? Explain.

12. (a) Describe the advanced analytics in new paradigm.

Or

(b) Write down the analytics culture within companies.

13. (a) Explain the understanding data analytics is good but knowing how to use it is better.

Or

(b) Discuss the purpose of database management systems.

14. (a) Distinguish between the regression and classification.

Or

(b) Determine the partitioning your data by using the K-means algorithm.

15. (a) Which algorithm to use in big data?

Or

(b) What about other machine learning algorithms?

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss the from bytes to Yottabytes of data revolution.

Or

(b) Compare the data complexity and data quality in big data.

17. (a) Examine the before and after big data analytics.

Or

(b) Outline the application of big data analytics with example.

18. (a) Illustrate the first phase find the data for data collection.

Or

(b) What are the difference between the data mining and text mining? Explain.

19. (a) Explain the predict of supervised learning.

Or

(b) Evaluate the principle of clustering algorithms.

20. (a) Determine the purpose of supervised and unsupervised algorithm.

Or

(b) Analysis the AI comes into your everyday life in Amazon.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10339 E **Sub. Code : ASCS 41**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024.

Fourth Semester

Computer Science

Skill Based Subject — MULTIMEDIA APPLICATIONS

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. ———————— is, as described previously, a woven combination of digitally manipulated text, photographs, graphic art, sound. animation, and video elements.

   (a) Graphics

   (b) Multimedia

   (c) Animation

   (d) All the above

2. A ———————— is a collection of characters of a single size and style belonging to a particular typeface family.

(a) color (b) image

(c) sound (d) font

3. ———————— signals are digitized using pulse code modulation.

(a) Video (b) Radio

(c) Audio (d) Digital

4. What does AIFF stand for?

(a) Audio Interchange File Format

(b) Audio Interchange File Folder

(c) ASCII Interchange File Format

(d) Audio Internet File Format

5. Which of the following audio format was developed by Microsoft?

(a) AIFF (b) MIDI

(c) Real audio (d) WAV

6. Animation is possible because of a biological phenomenon known as and a ————————.

(a) Persistence of vision

(b) Persistence of view

(c) Percentage of vision

(d) Percentage of view

7. ———————— depicts all the tasks along a timeline.

(a) PERT Charts (b) Gantt charts

(c) CPM (d) None of the above

8. Abbreviation of RFP is ————————.

(a) Response for Proposal

(b) Request for Proposal

(c) Request for Profit

(d) None of the above

9. A ———————— (or site map) provides you with a table of contents as well as a chart of the logical flow of the interactive interface.

(a) Object

(b) Navigation map

(c) Structural path

(d) None of the above

10. ———————— can be one of the most expensive and time-consuming tasks in organizing a multimedia project.

(a) Content acquisition

(b) Knowledge acquisition

(c) Plan acquisition

(d) Structural acquisition

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Define multimedia. How multimedia supports in Business?

Or

(b) Write in detail about Hypertext.

12. (a) What are bitmaps? Explain.

Or

(b) Discuss about power of sound.

13. (a) How power of motion works?

Or

(b) Give details about how video work and is displayed.

14. (a) Mention the stages of multimedia.

Or

(b) Brief note on :

(i) idea analysis

(ii) idea management software.

15. (a) Explicate Designing the structure of a multimedia project.

Or

(b) How testing helps in multimedia project?

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain in detail about fonts and faces.

Or

(b) Write note on hypermedia structure.

17. (a) Elaborate the color concept in multimedia.

Or

(b) Narrate the concept of MIDI audio.

18. (a) How to make a rolling ball and a bouncing ball? Explain with its procedure.

Or

(b) What is digital video containers? Discuss.

19. (a) Illustrate about software needs in making multimedia.

Or

(h) What are the process of making multimedia? Explain.

20. (a) Explain :

(i) Production phase

(ii) Acquiring content of a multimedia project.

Or

(b) Express about of

(i) Delivering on CD-ROM and

(ii) Delivering on World Wide Web.

———————

(6 pages)

Reg. No. : .....

Code No. : 10340 E **Sub. Code : ANCS 31/ ANSE 31**

U.G. (CBCS) DEGREE EXAMINATION,
APRIL 2024.

Third Semester

Computer Science / Software Engineering

Non Major Elective – FUNDAMENTAL OF INTERNET AND EMERGING TECHNOLOGIES

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. The brain of any computer system is ————————.

(a) CPU (b) ALU

(c) Memory (d) Control unit

2. Computers that are portable and convenient for users who travel are known as ————————.

(a) super computer (b) laptop

(c) mini computer (d) file server

3. ———————— is a program that converts high-level language to assembly language.

(a) assembler (b) computer

(c) interpreter (d) linker

4. To create HTML page, you need ————————.

(a) Web browser (b) Text editor

(c) Both (a) and (b) (d) None of the above

5. The UDP is using the services of IP to provide ————————.

(a) host-to-host (b) ip-to-ip

(c) hop-to-hop (d) process-to-process

6. Which of the following topology covers security, robust and eliminating the traffic factor?

(a) mesh (b) ring

(c) star (d) bus

7. A computer ———————— is a malicious code which self-replicates by copying itself to other programs.

(a) program (b) virus

(c) application (d) worm

8. A hypervisor is sometimes also called a?

(a) VMA (b) VMS

(c) VMM (d) VMR

9. Artificial Intelligence is about ————————.

(a) Playing a game on Computer

(b) Making a machine Intelligent

(c) Programming on Machine with your Own Intelligenced

(d) Putting your intelligence is Machine

10. ———————— mainly deals with the honestly and morality of a person.

(a) Robotics (b) Speech rocognition

(c) Virtue ethics (d) None of the above

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain characteristics of computers.

Or

(b) Write notes on

(i) Mainframe

(ii) Super computer

12. (a) What is application software and packaged software?

Or

(b) What is java script? Write its advantages.

13. (a) Write about OSI model.

Or

(b) What are Radio wave and micro wave?

14. (a) What is Hacking and phishing?

Or

(b) Write about
(i) Public cloud
(ii) Hybrid cloud

15. (a) Describe ethics and law in computer.

Or

(b) Write note computer vision.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Describe the basic structure of a computer.

Or

(b) Discuss any two generation of computer.

17. (a) Describe in detail
(i) SAP
(ii) Sales force

Or

(b) Discuss the advantages of
(i) HTML
(ii) GO language

18. (a) What is digital transformation? Mention its features.

Or

(b) Write in detail about

(i) Bluetooth
(ii) Types of networks

19. (a) What is Cyber Security? What are the different types of Cyber Security?

Or

(b) Explain

(i) Platform as a service
(ii) Application as a service

20. (a) Write in detail about machine learning.

Or

(b) Explain the benefits of open source software.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10341 E **Sub. Code : AECS 51**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Fifth Semester

Computer Science – Major Elective

MOBILE APPICATION DEVELOPMENT

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The send Sticky broad cast (intent) method in android is used to show that the intent is _____.

   (a) Optional (b) Prioritize

   (c) Sticky (d) Main

2. In which state the activity is, of it is not in focus, but still visible on the screen?

   (a) Stopped state (b) Destroyed state

   (c) Paused state (d) Running state

3. Which of the following is a dialog class in android?

(a) Alert Dialog (b) Data picker Dialog

(c) Progress Dialog (d) All of the above

4. Which of the following is the topmost layer of android architecture?

(a) System Libraries and Android Runtime

(b) Linux Kernel

(c) Applications

(d) Applications Framework

5. Which of the following is the name of the Android version 1.5?

(a) Èclair (b) Froyo

(c) Cupcake (d) Donut

6. Which of the following is the parent class of service?

(a) Context

(b) Object

(c) Context Theme Wrapper

(d) Context Wrapper

7. Which of the following is the parent class of Activity?

(a) Context

(b) Object

(c) Context Theme Wrapper

(d) Main

8. Which of the following android component displays the part of an activity on screen?

(a) View (b) Manifest

(c) Intent (d) Fragment

9. Which of the following method is used to handle what happens after clicking a button?

(a) On Click (b) On Create

(c) On Select (d) On Rim

10. Which of the following is contained in the src folder?

(a) XML (b) Java source code

(c) Manifest (d) Windows

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Elaborate the complete folder structure of android.

Or

(b) How will you add values to the spinner? Explain.

12. (a) Describe the purpose of android manifest file.

Or

(b) How the android apps work?

13. (a) Explain the purpose of toggle button.

Or

(b) Mention the need of change a view's size.

14. (a) Point out the drink detail activity.

Or

(b) Determine the steps to add a button on Main Activity's layout.

15. (a) How will you create tables using SQL? Give example.

Or

(b) Summarize the change Drink Activity to use the Starbuzz database.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 600 words.

16. (a) Discuss the steps to edit code with the android studio editors.

Or

(b) How will you build the custom java class? Explain.

17. (a) Examine the process of activity lifecycle.

Or

(b) Outline the implement the on Phase() and on Resume() method

18. (a) Illustrate the your user interface is made up of layouts and GUI components.

Or

(b) What are the uses of blueprint tools? Explain.

19. (a) Draw and explain the functions of fragment lifecycle.

Or

(b) Evaluate the connect list views to arrays with an array adapter.

20. (a) Formulate the SQLite database have a version number.

Or

(b) Analysis the steps to get a reference to the Starbuzz database.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10342 E **Sub. Code : AECS 52**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Fifth Semester

Computer Science – Major Elective

INTRODUCTION TO SECURITY IN COMPUTING

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which of the following is not a principle of data security?

   (a) Data Confidentiality

   (b) Data Integrity

   (c) Authentication

   (d) None of the above

2. To encrypt the plaintext, a cryptographic algorithm works in combination with a key _____.

   (a) Work, number, or phrase

   (b) Special Symbols

   (c) Function-Keys

   (d) Ordinary Keys

3. Conventional cryptography also known as _____ encryption.

   (a) Asymmetric-key (b) Logical-key

   (c) Symmetric-key (d) Primary-key

4. The private key in asymmetric key cryptography is kept by _____.

   (a) Sender

   (b) Receiver

   (c) Sender and receiver

   (d) All the connected devices to the network

5. Which of the following ciphers o a block cipher?

   (a) Caesar cipher (b) Vernam cipher

   (c) Playfair cipher (d) Whole cipher

6. Which of the following is not possible through hash value?

   (a) Password Check

   (b) Data Integrity check

   (c) Digital Signatures

   (d) Data retrieval in its original form

7. Cryptanalysis is used _____.

   (a) To find some insecurity in a cryptographic scheme

   (b) To increase the speed

   (c) To encrypt the data

   (d) To make new ciphers

8. Which is not an objective of network security?

   (a) Identification (b) Authentication

   (c) Access control (d) Lock

9. The process of verifying the identify of a user.

   (a) Authentication (b) Identification

   (c) Validation (d) Verification

10. A process of making the encrypted text readable again.

(a) Decryption (b) Encryption

(c) Network security (d) Information hiding

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Distinguish between the passive attacks and active attacks.

Or

(b) Write down the nature of the DES algorithm.

12. (a) Describe the testing for primality.

Or

(b) What are the several techniques of distribution of public keys? Explain.

13. (a) Explain the requirements for a hash function.

Or

(b) Mention the approaches of public-key encryption.

14. (a) Point out the requirements of Kerberos.

Or

(b) Determine the several key-management functions of S/MIME.

15. (a) Elaborate the rule-based intrusion detection.

Or

(b) Summarize the different types of firewalls.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss the block cipher design principles.

Or

(b) Outline the cipher block chaining mode with diagram.

17. (a) Examine the distribution of secret keys using public-key cryptography.

Or

(b) Illustrate the elliptic curve arithmetic with diagram.

18. (a) Draw and explain the efficient implementation of HMAC.

Or

(b) What are the authentication requirements? Explain.

19. (a) Compare the alert protocol and handshake protocol.

Or

(b) Evaluate the X.509 authentication service.

20. (a) Summarize the generations of antivirus software.

Or

(b) Analysis the architecture for distributed intrusion detection.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10343 E **Sub. Code : AECS 53**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Fifth Semester

Computer Science

Major Elective – CLOUD COMPUTING

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL the questions.

Choose the correct answer :

1. Cloud computing is _____ computing where by shared resources, s/w and information are provided to computers and other devices on-demand, like the electricity grid.

   (a) Internet-based

   (b) System based

   (c) Large scale

   (d) None

2. A cloud deployment model represents a specific type of _____ environment, primarily distinguished by ownership, size and access.

(a) Security (b) Privacy

(c) Deployment (d) Cloud

3. Virtualized computing resources are provisioned into isolated instances called _____ where operating system and applications can be installed.

(a) Malware attack (b) Virtualized server

(c) Virtual machine (d) Virtual processors

4. _____ is represented by stored cloud services.

(a) Private cloud (b) Hybrid cloud

(c) Public cloud (d) Both (a) and (b)

5. Which of these is not an advantage of cloud?

(a) Running out of storage

(b) Easier to maintain

(c) Easy access

(d) Paying only for what is used

6. Cloud service consist of

(a) Plat form, s/w, Infrastructure

(b) S/w only

(c) S/w, H/w, Infrastructure

(d) H/w only

7. _____ data has always been a complex and time consuming operation.

(a) File storage (b) Big data

(c) Backup (d) Latency

8. _____ is a specialization for service oriented architecture.

(a) Migration (b) Mitigration

(c) Micro services (d) Mcc

9. The business benefits of using cloud computing are

(a) Reduce cost

(b) No need to rip and replace

(c) Automation provides agility

(d) All the above

10. The micro service architecture is an architectural style that structures an application as a collection of _____ services.

(a) Frequently

(b) Pattern

(c) Traditional

(d) Loosely coupled

PART B — ($5 \times 5 = 25$ marks)

Answer ALL the questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) State essential characteristics of cloud computing.

Or

(b) State the benefits of cloud computing.

12. (a) What are the uses of platform as a service in cloud computing?

Or

(b) What is Xen and its elements for virtualization?

13. (a) What is IaaS? What are the characteristics of IaaS?

Or

(b) List out the benefits of SOA.

14. (a) Discuss the elements of good SLA.

Or

(b) Write a note on Healthcare in cloud computing.

15. (a) List down the advantages of message passing model.

Or

(b) Explain the layers and features of Nebula.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL the questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Explain the cloud computing features, services and deployment models in detail.

Or

(b) Illustrate the architecture of cloud computing.

17. (a) What is virtualization? What are the benefits and mechanism used for virtualization?

Or

(b) List out the security risks in cloud computing.

18. (a) Describe about the performance monitoring and management of cloud services.

Or

(b) Explain in detail about the goal of CIA of security.

19. (a) Briefly explain different kinds of disasters should prepare in cloud computing.

Or

(b) Explain the types of migration in cloud computing with examples.

20. (a) Write a note on

(i) Data Integrity

(ii) Amazon web services.

Or

(b) Briefly explain Hadoop ecosystem.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10344 E **Sub. Code : AECS 61**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Sixth Semester

Computer Science

Major Elective — INTERNET OF THINGS

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. Which layer is used for wireless connection in IoT devices?

   (a) Application layer

   (b) Network layer

   (c) Data link layer

   (d) Transport layer

2. Which of the following is false about the IoT components?
   (a) A light sensor (photoresistor) is an analog sensor
   (b) A microphone is a digital sensor
   (c) A push button is a digital sensor
   (d) A keyboard is a digital sensor

3. Which of the following is used to capture data from the physical world in IoT devices?
   (a) Sensors (b) Actuators
   (c) Microprocessors (d) Microcontrollers

4. Which of the following command is used to trigger the Amazon echo IOT device?
   (a) Hello (b) Suri
   (c) Alexa (d) Hey

5. Which of the following is not a sensor in IoT?
   (a) BMP280 (b) DHT11
   (c) Photoresistor (d) LED

6. Which service permits the changes to the IoT services?
   (a) Update
   (b) Registered service status
   (c) Enable from suspension
   (d) Enable

7. What is the role of Cloud in smart grid architecture of IoT?

(a) Security (b) Collect data

(c) Manage data (d) Store data

8. What is the component of an IoT system that executes a program?

(a) A sensor

(b) A microcontroller

(c) An actuator

(d) A digital to analog converter

9. The huge number of devices connected to the Internet of Things has to communicate automatically, not via humans. What is this called?

(a) Skynet

(b) Bot 2 Bot

(c) Machine 2 Machine

(d) Intercloud

10. Internet of Things needs a lot of network connection. What is the proposed "white Space" radio standard called?

(a) Bluetooth (b) WiMax

(c) Weightless (d) Zigbee

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Elaborate the request and response model in communication models.

Or

(b) Describe the logical design of IoT.

12. (a) What are the steps to getting started with python for IoT? Explain.

Or

(b) Bring out the different types of virtualization.

13. (a) Write down the IoT in military application.

Or

(b) Point out the purpose of IoT and politics.

14. (a) Explain the emergence and definition of a smart city.

Or

(b) Analysis the factors affecting automation using IoT.

15. (a) Summarize the security for IoT and M2M technologies.

Or

(b) What are the securities in ETSI M2M network technologies? Explain.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Examine the IoT architecture and components with diagram.

Or

(b) Determine the need of IoT technology stack.

17. (a) Draw and explain the Raspberry Pi and its components.

Or

(b) Illustrate the virtualization for IoT resource management.

18. (a) Outline the difference between cloud computing and IoT.

Or

(b) Compare the service and deployment models for cloud IoT.

19. (a) Discuss the design strategies of smart city.

Or

(b) Analysis the implementation of smart education system.

20. (a) Demonstrate the network technologies for IoT and M2M.

Or

(b) Discuss the securities in IETF M2M network technologies.

———————

(6 pages) **Reg. No. :** .....

Code No.: 10345 E **Sub. Code: AECS 62**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024.

Sixth Semester

Computer Science

Major Elective – INFORMATION TECHNOLOGY
SERVICE MANAGEMENT

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer:

1. The term information technology can be summarized as

   (a) Computers + Connectivity

   (b) Hardware + Software

   (c) Connective + Software

   (d) Connectivity + Hardware

2. The technology used to store, manipulate, distribute, create information is

   (a) Industrial Technology

   (b) Information Technology

   (c) Both (a) and (b)

   (d) None of these

3. Which is used to sharing the information through telephone line?

   (a) Modem (b) Telephone

   (c) Mouse (d) Monitor

4. A computer which work on the network is known as ————————.

   (a) Client (b) Server

   (c) Object (d) None of these

5. The primary goal of the incident management process is ————————.

   (a) To minimize the adverse impact of incidents and problem on the business

   (b) To restore normal service operations as quickly as possible

   (c) To help information IT and driven business value

   (d) To manage IT infrastructure and operations

6. Which stages of the ITIL framework represent the revolving lifecycle stages of the lifecycle hub and spoke design.

   (a) Service design, Service transition and continual service improvement

   (b) Service strategy, Service operation and Continual service improvement

   (c) Service Design, Service Transition and Service Operation

   (d) None of the above

7. ———— is the process of identifying organizing, storing and disseminating information within an organization.

   (a) Human Resource Management

   (b) Knowledge Management

   (c) Financial Management

   (d) MIS

8. Cyber Security also referred to as ————.

   (a) Information Technology Security

   (b) Incident security

   (c) Software Management

   (d) None of the above

9. Tickets with ———— priorities of severities should be considered while choosing the sample for ticket Audit.

(a) 1 (b) 2

(c) 3 and 4 (d) All the above

10. The document that is used to identify IT service management process that are in scope of program is ————.

(a) ITSM (b) ITIL

(c) EPD (d) None of the above

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) What are the five components that make up an information system?

Or

(b) Explain about the data components relates to the hardware and software components of information system.

12. (a) What is workflow in ticketing system?

Or

(b) Explain about asset management.

13. (a) What are the stages of incident management process?

Or

(b) Describe the examples of how to use technology assist with your studies.

14. (a) Explain incident prioritization.

Or

(b) Explain proactive problem management.

15. (a) What are the aspects of service design? Explain.

Or

(b) Explain the types of ticketing tool.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 600 words.

16. (a) What are the benefits of Omni-Channel ticketing system? – Explain.

Or

(b) Write note on

(i) Business process

(ii) Social media

(iii) E-mail

17. (a) Explain the benefits of IT infrastructure management.

Or

(b) Explain different types of software licensing models.

18. (a) Describe the Role that use incident resolution in IT.

Or

(b) Discuss about the difference between critical incident management and Incident management.

19. (a) (i) What is meant by project closure?

(ii) What are the steps for closing projects?

Or

(b) What are the requirements for Release management? Explain.

20. (a) Explain the features of Ticketing System.

Or

(b) Explain the service operations in detail with example.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10353 E **Sub. Code : AMIT 51/ AMCT 51**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024

Fifth Semester

Information Technology/Computer Science and I.T. – Core

SCRIPTING LANGUAGE

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. VBScript was introduced in ————————.

   (a) WAMP

   (b) XAMP

   (c) IIS

   (d) AWS

2. VBScript is a subset of the ————————.

(a) ASP (b) VBA

(c) JSP (d) Servlet.

3. ———————— is the only data type supported in VBScript.

(a) variant (b) int

(c) number (d) single

4. Identify the concatenation operator.

(a) * (b) /

(c) % (d) &

5. To trigger script execution in response to user activity such as a form action is called

(a) Process (b) Thread

(c) Event (d) Cursor

6. What is the basic difference between JavaScript and Java?

(a) Functions are considered as fields

(b) Functions are values, and there is no hard distinction between methods and fields

(c) Variables are specific

(d) There is no difference

7. ———————— is HTML document that displays dynamic characteristics such as movement or shows and hides page content.

(a) XML

(b) Jscript

(c) CSS

(d) DHTML

8. In Java Script to display a quick dialog to show a message, use the ———————— method of Window.

(a) input( ) (b) alert( )

(c) rawinput( ) (d) printf()

9. Which operator is used to test if an object is of a specified type or not?

(a) typeof (b) sizeof

(c) instanceof (d) compare

10. ———————— is a group of named constant values.

(a) enum (b) union

(c) tuple (d) struct

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) How to display information in VBScript?

Or

(b) List the steps to Hide VBScript from Older browsers.

12. (a) List the rules for declaring variables in VBScript.

Or

(b) Explain the Comparison operators in VBScript.

13. (a) Comment on Linked Script.

Or

(b) Write note on JavaScript Pseudo-URL.

14. (a) Illustrate about Variables in JavaScript.

Or

(b) Distinguish between break and continue statement.

15. (a) Describe the decision making statements in TypeScript.

Or

(b) How to create Strings in TypeScript? Explain its methods.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss the Advantages and Applications of Scripting Languages.

Or

(b) Explain the Program structure of VBScript.

17. (a) What is an Array? Explain the Array methods in VBScript.

Or

(b) How to create the user defined procedures in VBScript? Explain with an example.

18. (a) Elucidate the Event handlers in JavaScript.

Or

(b) Enumerate the Applications of JavaScript.

19. (a) Write note Regular expressions in JavaScript.

Or

(b) Explain the Composite data types in JavaScript.

20. (a) Illustrate the operators in Typescript

Or

(b) Write note on Classes and Objects in TypeScript.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10359 E **Sub. Code : AMIT 62/ AMCT 62**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024

Sixth Semester

Information Technology/Computer Science and Information Technology – Core

GRAPHICS AND MULTIMEDIA TECHNOLOGY

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Among the given scientists/inventor who is known as the father of Computer Graphics?

   (a) Nikola Tesla

   (b) Ivan Sutherland

   (c) Ada Lovelace

   (d) Marie Curie

2. A common device for drawing, painting or interactively selecting coordinate positions on an object is a ————————.

(a) Digitizer (b) Data glove

(c) Touch Panels (d) Workstations

3. What is the equation for a circle?

(a) $y = mx + c$

(b) $y^2 = r^2 - x^2$

(c) $y^2 = r^2 + x^2 * y^2 r^2 - x^2$

(d) $y = mx - c$

4. Scan line algorithm for filling polygon is ———————— algorithm.

(a) Recursive

(b) Non-Recursive

(c) Semi-Recursive

(d) Refreshment

5. A ———————— transformation alters the size of an object.

(a) Translation (b) Rotation

(c) Scaling (d) Reflection

6. Perspective projection can be divided into how many categories?

(a) 3 (b) 4

(c) 5 (d) 6

7. ———————— refers to any type of application that involves more than one type of media such as text, graphics video, animation and sound.

(a) An executable file

(b) Desktop publishing

(c) Multimedia

(d) Hypertext

8. The size of a text is usually measured in ————————.

(a) Dot (b) Pixel

(c) Inches (d) Points

9. MPEG stands for ————————.

(a) Motion Picture Experts Group

(b) Moving Perts Experts Group

(c) Moving Picture Experts Group

(d) Moving Picture Energy Group

10. Which of the following is video file format?

(a) .MP (b) .MP3

(c) .MP4 (d) .AVI

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write the disadvantages of Computer Graphics.

Or

(b) Write Short Notes on Output Devices.

12. (a) Write short notes on Properties of Ellipses.

Or

(b) Write short notes on polygon Clipping Algorithm.

13. (a) Write short notes on Matrix Representation and Homogenous Coordinates.

Or

(b) Write Short notes on Vanishing points.

14. (a) Write the Uses of Multimedia.

Or

(b) Write short notes on Text in Multimedia.

15. (a) Write short notes on Image File Formats.

Or

(b) Write short notes on Audio File Formats.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain about the Basic elements of computer graphics.

Or

(b) Explain about the Architecture of Random Scan Display Devices.

17. (a) Explain about Mid Point Circle Drawing Algorithm.

Or

(b) Explain about Cohen Sutherland Line Clipping Algorithm.

18. (a) Explain about Composite Transformation.

Or

(b) Explain about Parallel Projection in detail.

19. (a) Explain about Multimedia Applications in detail.

Or

(b) Explain about Font Editing and Design Tools.

20. (a) Explain about Natural Light and colors in detail.

Or

(b) Explain about shooting and editing in detail.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10360 E **Sub. Code : AAIT 41/ AACT 41**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Fourth Semester

Information Technology/
Computer Science and IT — Allied

RELATIONAL DATABASE MANAGEMENT SYSTEM

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A database system provides a ———— to specify the database scheme

(a) DML (b) DCL

(c) DDL (d) None

2. A ———————— is an association among several entities

(a) Correspondence

(b) Key

(c) Relationship

(d) Attribute

3. The operation issued to combine information from any two relations is ————————

(a) Union

(b) Set - difference

(c) Projection

(d) Cartesian product

4. Which is a procedural language?

(a) Tuple Relational calculus

(b) Domain relational calculus

(c) Relational Algebra

(d) All

5. ———————— requires setting specific values for rows / columns to change using where clause

(a) Insert (b) Update

(c) Commit (d) Roll back

6. Which is a character – by character substitution?

(a) TRASLATE (b) DECODE

(c) Both (d) None

7. Data types that consists of one or more subtype is called ————————

(a) Array

(b) Abstract Data type

(c) Object

(d) References

8. Profiles created by create profile command are managed by ————————

(a) User (b) DBA

(c) Both (d) None

9. A ———————— defines an action the database should take when some database related event occur

(a) event (b) trigger

(c) cursor (d) action

10. Groups of procedures, functions, variables and SQL statement grouped together is called ————————

(a) Classes (b) Packages

(c) Objects (d) None

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Define data model and categorize them.

Or

(b) Illustrate the basic structure of an E-R diagram with an example.

12. (a) Write short notes on aggregation.

Or

(b) Explain Third Normal Form with example.

13. (a) Describe the keywords in SQL for selecting data from an oracle table.

Or

(b) Describe views is oracle with example.

14. (a) Discus password management is detail.

Or

(b) Explain the structure of a simple object with example.

15. (a) Categorize the different types of triggers.

Or

(b) Explain procedures is PL/SQL with an example.

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain the purpose of database systems.

Or

(b) Describe E-R model in detail.

17. (a) Discuss BCNF with examples.

Or

(b) Explain the fundamental operations is the relational algebra.

18. (a) Explain string functions in detail.

Or

(b) Discuss the ways of dropping tables and columns.

19. (a) How will you add and remove password in roles?

Or

(b) Explain the concept of objects in RDBMS.

20. (a) What are the sections in a PL/SQL program.

Or

(b) Describe the use of functions in PL/SQL.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10499 E **Sub. Code : CMCS 11/ CMSE 11**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

First Semester

Computer Science / Software Engineering – Core

PROGRAMMING IN C

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which keyword is used to prevent any changes in the variable within a C program?

   (a) Immutable (b) Mutable

   (c) Const (d) Volatile

2. Which of the following is not a valid C variable name?

   (a) int number; (b) float rate;

   (c) int variable_count; (d) int $main;

3. Which data type can accept the switch statement?

(a) Int (b) Char

(c) Long (d) All of the mentioned

4. Which of the data types has the size that is variable?

(a) Int (b) Struct

(c) Float (d) Double

5. Which of the following type-casting have chances for wrap around?

(a) From int to float (b) From int to char

(c) From char to short (d) From char to int

6. Which of the following cannot be static in C?

(a) Variables

(b) Functions

(c) Structures

(d) None of the mentioned

7. Which of the following is the correct syntax to sent an array as a parameter to functions?

(a) Func(&array); (b) Func(#array);

(c) Func(*array); (d) Func(array[size]);

8. User-defined data type can be derived by _____.

(a) Struct (b) Enum

(c) Typedef (d) All of the mentioned

9. Which of the following cannot be a structure member?

(a) Another structure

(b) Function

(c) Array

(d) None of the mentioned

10. EOF is an integer type defined in stdio. hand has a value _____.

(a) 1 (b) 0

(c) NULL (d) –1

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) How will you declare of storage class? Explain.

Or

(b) Describe the character set used in C program.

12. (a) Elaborate the 'do....while' statement with simple example.

Or

(b) How will you use GOTO statement in C program? Give example.

13. (a) Explain the different types of string handling functions.

Or

(b) How will you reading strings from terminal in C? Give example.

14. (a) Where are structures useful in C? Explain.

Or

(b) Bring out the concept of recursion in C language.

15. (a) How the pointer variable declared and initialized? Explain.

Or

(b) Write a C program to check the given string is palindrome or not.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 600 words.

16. (a) What are the various arithmetic, logical and relational operators in C? Give examples.

Or

(b) Illustrate the methods of managing input and output operations in C.

17. (a) Explain the switch-case construct in C with an example.

Or

(b) Write the general from of the "for" loop in C. Explain its functions with examples.

18. (a) How are the one-dimensional array elements read and written?

Or

(b) Summarize the writing string to screen C.

19. (a) Outline the need for user defined functions.

Or

(b) Discuss the arrays of structures with example.

20. (a) Elaborate the steps to creating and opening a file in C.

Or

(b) How will you accessing a variable through its pointers? Explain.

———————

(6 pages)

Reg. No. : .....

Code No. : 10500 E **Sub. Code : CMCS 21/ CMSE 21**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Second Semester

Computer Science/Software Engineering — Core

OBJECT ORIENTED PROGRAMMING IN C++

(For those who joined in July 2021–2022)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. The wrapping up of data and function into a single unit is known as

   (a) Inheritance (b) Polymorphism

   (c) encapsulation (d) static

2. Identify the Access specifier a Class member outside the class are inaccessible but they can be accessed by any subclass of that class.

(a) private (b) public

(c) protected (d) static

3. Copy constructor must receive its arguments by

(a) either pass-by-value or pass-by-reference

(b) only pass-by-value

(c) only pass-by-reference

(d) only pass by address

4. Which of the following are NOT provided by the compiler by default?

(a) Zero-argument Constructor

(b) Destructor

(c) Copy Constructor

(d) Copy Destructor

5. _____ operators cannot be overloaded?

(a) [ ] (b) ->

(c) .(dot) (d) & r

6. The friend functions and the member functions of a friend class can directly access the _____ data.

   (a) Private and protected

   (b) Private and public

   (c) Protected and public

   (d) Private, protected and public

7. Late binding can be implemented by which of the following?

   (a) Function overloading

   (b) operator overloading

   (c) Virtual function

   (d) static function

8. _____ header file is used for manipulators.

   (a) < iomanipulator.h>

   (b) <stdiomanip.h>

   (c) <stdmanip.h>

   (d) <iomanip.h>

9. The class fstream is used for

   (a) High level stream processing

   (b) Low level stream processing

   (c) File stream processing

   (d) All of them

10. Template parameter(s) inside

(a) # # (b) % %

(c) < > (d) <? ?>

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) How a function return an object to the caller? Explain.

Or

(b) Examine the features of Object Oriented Programming.

12. (a) List the characteristics of Parameterized constructors.

Or

(b) Create programmatically Destructor function.

13. (a) Enumerate the steps for creating overloaded operators.

Or

(b) Explain the characteristics of Inheritance.

14. (a) What is the purpose of pointers in C++?

Or

(b) Write about the stream classes for console operations.

15. (a) Describe the various file mode options available.

Or

(b) Explain the general format of function template.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

16. (a) Discuss the friend function programmatically.

Or

(b) Write a note on Arrays of Objects.

17. (a) Illustrate the types of constructors in C++.

Or

(b) Distinguish between destructors and constructors.

18. (a) How to overload an Unary operators? Explain with an example.

Or

(b) Discuss the various forms of inheritance.

19. (a) Explain about pure virtual functions.

Or

(b) Describe the purpose of the functions get ( ), put ( ) and getline ( ).

20. (a) Narrate the sequential input and output operations.

Or

(b) Explain class templates with suitable program.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10501 E **Sub. Code : CMCS 31**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Third Semester

Computer Science – Core

JAVA PROGRAMMING

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. When a class extends another class, then we call it as _____ inheritance.

   (a) Single

   (b) Multi level

   (c) Multiple

   (d) Hybrid

2. The _____ access modifier is accessible only within class

(a) Protected (b) Static

(c) Public (d) Private

3. Which of these keywords is used to define packages in Java?

(a) Class (b) Object

(c) Package (d) Interface

4. We can calculate the length of an array using _____.

(a) sizeof(array)

(b) array.len

(c) array.length

(d) array.sizeof()

5. Identify the method contain the body of the thread.

(a) main() (b) stop()

(c) start() (d) run()

6. Which of these keywords must be used to monitor for exceptions?

(a) Finally (b) Throw

(c) Catch (d) Try

7. Applets are designed to be embedded within an _____.

(a) Javascript (b) Css

(c) HTML (d) SQL

8. _____ method is defined in Graphics class, it is used to output a string in an applet.

(a) display()

(b) Print()

(c) drawString()

(d) transient()

9. Which of these methods are used to register a keyboard event listener?

(a) KeyListener()

(b) add()

(c) addKeyListener()

(d) eventKeyboardListener()

10. _____ Class that allows the user to enter the multiline text.

(a) Text Field (b) Choice

(c) TextArea (d) List

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) What are objects? How are they created from a class?

Or

(b) Distinguish between constructor and method in Java.

12. (a) Write about One dimensional arrays.

Or

(b) Describe the features of Static import.

13. (a) Examine the thread methods.

Or

(b) How to throw our own exceptions? Explain.

14. (a) List the steps involved in developing and testing applet.

Or

(b) Discuss the aligning of applet output.

15. (a) Write a Applet program to get two numbers from the user and find the sum.

Or

(b) Explain the Hierarchy of event-based classes in Java.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Write notes on Inheritance.

Or

(b) Illustrate the method overloading in Java with an example.

17. (a) Describe the various forms of implementing interfaces. Give examples of java code for each case.

Or

(b) Demonstrate the two dimensional array with example program.

18. (a) Explain the Multiple catch statements.

Or

(b) What is synchronization? When do we use it?

19. (a) Create a program to pass parameters to Applets.

Or

(b) Explain in detail the Skeleton of an Applet.

20. (a) Write a program depicting the usage of keyboard event in an applet.

Or

(b) Develop an Applet that draws a human face.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10502 E **Sub. Code : CMCS 41**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Fourth Semester

Computer Science – Core

DATA STRUCTURE

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL the questions.

Choose the correct answer :

1. Which of these best describes an array?

   (a) A data structure that shows a hierarchical behaviour

   (b) Container of objects of similar types

   (c) Arrays are immutable once initialised

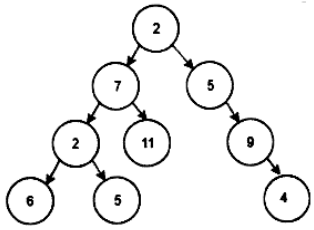
   (d) Array is not a data structure

2. What is a sparse array?
   (a) Data structure for representing arrays of records
   (b) Data structure that compactly stores bits
   (c) An array in which most of the elements have the zero value
   (d) An array in which memory is allocated in run time

3. In linked list each node contain minimum of two fields. One field is data field to store the data second field is _____.
   (a) Pointer to character (b) Pointer to integer
   (c) Pointer to node (d) Node

4. Which among the below specified condition is applicable if the Queue is non - empty?
   (a) rear > front (b) rear < front
   (c) rear = front (d) Unpredictable

5. For the tree below, write the pre-order traversal.



   (a) 2, 7, 2, 6, 5, 11, 5, 9, 4
   (b) 2, 7, 5, 2, 6, 9, 5, 11, 4
   (c) 2, 5, 11, 6, 7, 4, 9, 5, 2
   (d) 2, 7, 5, 6, 11, 2, 5, 4, 9

6. What is a full binary tree?

(a) Each node has exactly zero or two children

(b) Each node has exactly two children

(c) All the leaves are at the same level

(d) Each node has exactly one or two children

7. Kruskal's algorithm is a _____.

(a) Divide and conquer algorithm

(b) Dynamic programming algorithm

(c) Greedy algorithm

(d) Approximation algorithm

8. Worst case is the worst case time complexity of Prim's algorithm if adjacency matrix is used?

(a) O (log V) (b) O (V^2)

(c) O (E^2) (d) O (V log E)

9. Merge sort uses which of the following technique to implement sorting?

(a) Backtracking

(b) Greedy algorithm

(c) Divide and conquer

(d) Dynamic programming

10. What is direct addressing?

(a) Distinct array position for every possible key

(b) Fewer array positions than keys

(c) Fewer keys than array positions

(d) Same array position for all keys

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions by choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Write about Multi – dimensional array.

Or

(b) What is ADT? Give example.

12. (a) What is Linked list? How its memories are represented?

Or

(b) Discuss about Stack operation.

13. (a) What is Binary tree? Discuss about its application.

Or

(b) Write about conversion of infix to postfix operation.

14. (a) Write in details about Kruskal's algorithms.

Or

(b) Discuss about All Pair shortest path algorithm.

15. (a) Sort the following data by using Insertion sort. (12, 11, 13, 5, 6)

Or

(b) What is static hasing?

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions by choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) What is Array? Explain with example.

Or

(b) Explain in details about two dimensional array.

17. (a) Write ub details about Queue operations with example.

Or

(b) What is Sparse Matrix? Give example.

18. (a) Discuss in details about binary search tree insertion.

Or

(b) Illustrate Post order traversal with example data.

19. (a) Write and explain Prim's algorithms.

Or

(b) Discuss about detail Single source algorithm.

20. (a) How to sort the data b using Quick sort?

Or

(b) Sort the following data by using heap sort. {1, 3, 5, 4, 6, 13, 10, 9, 8, 15, 17}

———————

(6 pages)

Reg. No. : .....

Code No. : 10503 E **Sub. Code : CMCS 51**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024.

Fifth Semester

Computer Science – Core

RELATIONAL DATABASE MANAGEMENT SYSTEM

(For those who joined in July 2021–2022)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer.

1. Which of the following is not a type of database?
   (a) Hierarchical
   (b) Network
   (c) Distributed
   (d) Decentralized

2. Which type of database is based on the relational model, using tables with rows and columns to organize data?

   (a) Hierarchical Database

   (b) Network Database

   (c) Object-Oriented Database

   (d) Relational Database

3. ———— function is used to suppress duplicate values.

   (a) SELECT

   (b) DISTINCT

   (c) BETWEEN

   (d) None of these

4. A ———— is a property of the entire relation, rather than of the individual tuples in which each tuple is unique.

   (a) Rows (b) Key

   (c) Attribute (d) Fields

5. All aggregate functions except ———— ignore null values in their input collection.

   (a) Count(attribute) (b) Count(*)

   (c) Avg (d) Sum

6. The union operation is represented by

(a) $\cap$

(b) $\cup$

(c) –

(d) *

7. A table is in 3NF if it is in 2NF and if it has no _____

(a) Functional Dependencies

(b) Transitive Dependencies

(c) Trivial Functional Dependency

(d) Multivalued Dependencies

8. Which of the following normal forms deals with partial dependencies?

(a) First Normal Form (1NF)

(b) Second Normal Form (2NF)

(c) Third Normal Form (3NF)

(d) Fourth Normal Form (4NF)

9. Which SQL statement is used to modify the structure of an existing table in Oracle?

(a) UPDATE (b) ALTER

(c) MODIFY (d) CHANGE

10. Which language is used to write procedural code in Oracle?

(a) SQL (b) Java

(c) PL/SQL (d) Python

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write about the purpose of database systems.

Or

(b) Differentiate between data mining and information retrieval.

12. (a) Explain the term database schema and instance.

Or

(b) Illustrate the concept relational data model.

13. (a) Illustrate the data types supported by SQL.

Or

(b) Write a note on *'nested sub-queries'* with example.

14. (a) Interpret the concept mapping cardinalities.

Or

(b) Write down the extended E-R features.

15. (a) Provide a SQL command to create a new sequence in a database.

Or

(b) List the advantages of PL/SQL.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain the types of database languages with an example.

Or

(b) Explain the role of Database Administrator.

17. (a) Classify the different relational operations.

Or

(b) Write the basic structure of SQL queries.

18. (a) Demonstrate different set operations with an example.

Or

(b) What are views? Explain with an example.

19. (a) Categorize the various components of E-R model.

Or

(b) Describe the projection and join normal form with example.

20. (a) Explain procedure in PL/SQL with suitable example.

Or

(b) How to modify the existing table? Explain with example.

———————

(6 pages)

Reg. No. : .....

Code No. : 10504 E **Sub. Code : CMCS 52**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024.

Fifth Semester

Computer Science – Core

DATA COMMUNICATION AND
COMPUTER NETWORKS

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. In ———— mode of communication, the communication is unidirectional

   (a) Full duplex (b) Half duplex

   (c) Simplex (d) Quarter duplex

2. Framing is the responsibility of ———— layer in ISO/OSI model

(a) Physical (b) Network

(c) Transport (d) Data link

3. ———— is loss of energy

(a) Noise (b) Gain

(c) Distortion (d) Alternation

4. ———— is an example of unguided media

(a) OFC (b) Radio Wave

(c) UTP Cable (d) Copper Cable

5. The communication in a circuit-switched network requires ———— phases

(a) 1 (b) 2

(c) 3 (d) 4

6. LATA Stands for ————

(a) Lava Tava

(b) Local Access Transport Areas

(c) Late Attendance

(d) Local Area Triple Avenue

7. When two or more bits in a data unit has been changed during transmission, the error is called ———— error.

(a) random (b) burst

(c) inverted (d) double

8. Which of the following is not a data link layer protocol?

(a) Ethernet

(b) Point-to-Point protocol

(c) HTTP

(d) HDLC

9. IEEE standard for wireless LAN is ————

(a) 805.15 (b) 802.3

(c) 802.7 (d) 802.11

10. IPv4 address contains ———— bits.

(a) 35 (b) 32

(c) 64 (d) 128

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, by choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write about the modes of communication.

Or

(b) Discuss the key elements of a protocol.

12. (a) Write a short note on transmission impairment.

Or

(b) What is meant by multiplexing? What are its types?

13. (a) Write a note on routing table in a datagram network.

Or

(b) Compare different DSL technologies.

14. (a) Write the sender side algorithm for stop-and wait protocol and explain.

Or

(b) How can you use cable TV Network for data transfer.

15. (a) Describe any two devices for connecting LANs.

Or

(b) Write the advantages of IPvb address.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, by choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Write a note on analog signals used in data transmission.

Or

(b) Describe TCP/IP protocol suite.

17. (a) Explore the functions of physical layer.

Or

(b) Discuss unguided media.

18. (a) Explain different standards of dial-up modems.

Or

(b) Describe circuit switched network.

19. (a) How is error detection done in block coding.

Or

(b) Explore the frame format of MAC sublayer in wired LANs.

20. (a) What are the features of 3G cellular technology.

Or

(b) Write the functioning of DNS.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10505 E **Sub. Code : CMCS 53**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024.

Fifth Semester

Computer Science — Core

PHP AND MySQL

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. PHP stands for

   (a) PHP : Hypertext Preprocessor

   (b) Pretext Hypertext Project

   (c) Personal Home Processor

   (d) PHP – Home Page

2. do-while loop is an ———————— controlled loop.

(a) entry (b) exist

(c) exit (d) infinite

3. ———————— PHP function is used to check if the given variable is an array or not.

(a) which-array (b) is-array

(c) this-array ( ) (d) in-array

4. What is the output of following PHP code?

<?php

$state = array (“Karnataka”, “Goa”, “TamilNadu”, “Telungana”);

echo (array-search (“Tamil Nadu,” $ State));?>

(a) True (b) 3

(c) False (d) 2

5. The PHP ———————— function is used to open a file.

(a) open ( ) (b) fopen ( )

(c) create ( ) (d) insert ( )

6. The purpose of r mode is ————————.

(a) opens the file for reading

(b) opens file for writing

(c) opens the file for appending

(d) places the file point at end of file

7. Which of the following returns the current data and time in MySQL?

(a) Curdate ( ) (b) Now ( )

(c) Curtime ( ) (d) Date ( )

8. The ———————— data type in MySQL supports a signed range of –128 to 127 and an unsigned range of 0 to 255.

(a) INT (b) SMALL INT

(c) MEDIUM INT (d) TINY INT

9. Which among the following is the correct syntax for defining "constraint check" in MySQL?

(a) gender char (1) check (gender IX ('M', 'F'));

(b) gender char (1) check;

(c) gender check;

(d) gender char (1) check (gender);

10. 'NULL' in MySQL defines ————————

(a) absence of value (b) zero

(c) single value (d) 1

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write a detailed note on variable in PHP and explain with an example program.

Or

(b) Write a PHP program to sum the digits of an integer using while statement.

12. (a) Write a note on associate arrays in PHP.

Or

(b) How are user-defined functions defined and called in PHP?

13. (a) Define File. Discuss the steps in file manipulation session.

Or

(b) Discuss reading and writing binary files.

14. (a) Write the steps to create a database and a table in MySQL.

Or

(b) Illustrate data filtering using MySQL.

15. (a) Explain the methods for getting datasets in MySQL.

Or

(b) How are query outputs formatted in MySQL?

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Illustrate all types of operators in PHP with a program.

Or

(b) Write a detailed note on different control structures in PHP.

17. (a) Prepare railway time table using associative array and display the details of ay one train.

Or

(b) Create employee details form and display it using PHP.

18. (a) Discuss fgets, fgetc and fseek fuctions in PHP.

Or

(b) How are files created and manipulated in PHP?

19. (a) Write about DCL commands in MySQL.

Or

(b) Write a detailed note on subqueries and joining tables.

20. (a) Write about errors and error handling functions in PHP and MySQL.

Or

(b) With a program explain how PHP and MySQL interact.

———————

(6 pages)

Reg. No. : .....

Code No.: 10506 E **Sub. Code: CMCS 61**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024

Sixth Semester

Computer Science – Core

OPERATING SYSTEM

(For those who joined in July 2021–2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. ———————— is a program that acts as an intermediary between the user of a computer and computer hardware.

   (a) Application (b) Operating system

   (c) Desktop (d) Window

2. Operating system provides an ———————— within which other programs can do useful work.

   (a) Environment (b) Power

   (c) Resource (d) System

3. ———————— algorithm can reason short processes to wait for long processes.

   (a) Round Robin Scheduling

   (b) First Come First Served

   (c) Priority Scheduling

   (d) Shortest Job First Scheduling

4. Which state of a process defined as "the process has finished execution"?

   (a) Running (b) New

   (c) Ready (d) Terminated

5. Which one of the following is the deadlock avoidance algorithm?

   (a) Banker's algorithm

   (b) Round-robin algorithm

   (c) Elevators algorithm

   (d) Karn's algorithm

6. Process synchronization can be done

   (a) Hardware level

   (b) Software level

   (c) Both (a) and (b)

   (d) User level

7. _____ is the separation of user logical memory from physical memory.

(a) Main Memory

(b) Learn Only Memory

(c) Random Access Memory

(d) Virtual Memory

8. _____ is the solution to external fragmentation.

(a) Swapping (b) Protection

(c) Compaction (d) Sharing

9. _____ organises and provides info about files.

(a) File structure

(b) Directory

(c) File System

(d) File allocation table

10. To give an efficient and convenient access to the disk, the OS imposes a_____

(a) File system

(b) Directory

(c) File structure

(d) File allocation table

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Specify the main purpose of an operating system.

Or

(b) Recall system calls.

12. (a) Describe the state of a process.

Or

(b) Discuss briefly about Process Control Blocks.

13. (a) Give a solution to the critical section problem.

Or

(b) Outline the different necessary conditions for a deadlock.

14. (a) Describe the swapping method in memory management.

Or

(b) Compare first fit, best fit and worst bit storage strategies.

15. (a) Narrate the operations performed in a file.

Or

(b) Elucidate in detail about directory implementation.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Summarize the generation of operating system.

Or

(b) Give a detailed note on operating system design and implementation.

17. (a) Demonstrate IPC with an example.

Or

(b) Demonstrate the following with an example:
(i) SJF–Scheduling

(ii) Round Robin Scheduling

18. (a) Demonstrate the banker's algorithm for deadlock avoidance with an example.

Or

(b) Write a detailed note on semaphores.

19. (a) Discuss the different schemas for defining the logical structure of directory.

Or

(b) Explain the following:

(i) Frames

(ii) Thrashing

20. (a) Analyze RAID structure in detail.

Or

(b) Analyze about file sharing and protection.

———————

(7 pages) **Reg. No. :** .....

Code No. : 10507 E **Sub. Code : CMCS 62**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Sixth Semester

Computer Science - Core

SOFTWARE ENGINEERING AND TESTING

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer:

1. Software engineering emerged from

   (a) Art form

   (b) Business management

   (c) Electrical engineering

   (d) Civil engineering

2. Which software development model emphasizes iterative development cycles?

   (a) Waterfall model

   (b) Rapid Application Development (RAD)

   (c) Spiral model

   (d) Evolutionary model

3. Responsibilities of a Software project manager include

   (a) Coding software applications

   (b) Project planning and estimation

   (c) Hardware troubleshooting

   (d) Marketing software products

4. Requirements gathering and analysis involve

   (a) Developing software prototypes

   (b) Understanding customer needs

   (c) Writing code documentation

   (d) conducting system testing

5. A good software design is characterized by

   (a) complexity and redundancy

   (b) Simplicity and modularity

   (c) Rigidity and inflexibility

   (d) Lack of documentation

6. Structured analysis involves

   (a) Developing detailed design specifications

   (b) Identifying functional requirements

   (c) Creating data flow diagrams

   (d) Coding software algorithms

7. Black-box testing involves

   (a) Testing internal code structures

   (b) Testing software functionality without knowledge of internal code

   (c) Testing software performance under heavy load

   (d) Testing user interface components

8. Characteristics of a good user interface include

   (a) Complexity and clutter

   (b) Consistency and responsiveness

   (c) Limited functionality

   (d) Lack of user feedback

9. Software reliability is primarily concerned with

   (a) The probability of software failure

   (b) The speed of software execution

   (c) The size of software documentation

   (d) The number of software features

10. ISO 9000 certification is related to

(a) Software reliability

(b) Software quality management

(c) Software maintenance

(d) Software development methodologies

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain the concept of waterfall model, prototyping model, and evolutionary mode.

Or

(b) Describe the principles and working of RAD and the Spiral model.

12. (a) Explain the key responsibilities of a software project manager.

Or

(b) Briefly discuss the importance of functional requirements and their categorization in the SRS document.

13. (a) Explain the process of function-oriented software design.

Or

(b) Discuss the characteristics of a good software design.

14. (a) Define user interface design. Discuss the importance of usability testing in interface design.

Or

(b) Describe the fundamentals of components-based GUI development, advantages and limitations of using components in GUI development.

15. (a) Explain about software reliability. How does software reliability differ from hardware reliability?

Or

(b) Discuss the importance of software quality management.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 600 words.

16. (a) Briefly describe the impact of object-oriented design on modern software engineering practices.

Or

(b) Analyze the strengths and weaknesses of Waterfall model. How does each model address the various phases of software development?

17. (a) Discuss the role of project planning in software project management.

Or

(b) Briefly describe the process of requirements gathering and analysis in detail.

18. (a) Compare and contrast function-orientated software design with object- oriented design. Discuss their respective advantages and limitations.

Or

(b) Describe the process of structured analysis and structured design in detail.

19. (a) Give detailed note on coding process in software development.

Or

(b) Compare and contrast black-box testing and white-box testing.

20. (a) Describe the SEI Capability Maturity Model (CMM) and its levels. How does the CMM framework help organizations improve their software development processes?

Or

(b) Explain the characteristics, challenges of software maintenance and importance of software evolution.

———————

(6 pages)

Reg. No. : .....

Code No. : 10508 E **Sub. Code : CMCS 63**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Sixth Semester

Computer Science – Core

COMPUTER GRAPHICS AND VISUALIZATION

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Brightness of a display is controlled by varying the voltage on the ————

   (a) Focusing anode (b) Connection pins

   (c) Control grid (d) Power supply

2. Expansion of CRT is ————

   (a) Cathode Ray Tube

   (b) Computer Related Tube

   (c) Component Related Tools

   (d) Common Reflection Tube

3. ———— is applied in an object by pre positioning along a straight line.

(a) Translation (b) Rotation

(c) Scaling (d) Shearing

4. The scaling transformation alters the size of an ————

(a) vector (b) edge

(c) side (d) object

5. The region against which an object is to clipped is called a ————

(a) clipping (b) window

(c) view port (d) clip window

6. The two-dimensional viewing transformation is simply referred to as the window-to-viewport transformation or the ————

(a) viewing pipeline

(b) transformation

(c) windowing transformation

(d) world coordinate

7. A three dimensional reflection can be performed relative to a selected reflection axis or with respect to a selected ————

(a) rotations (b) reflection plane

(c) matrix form (d) edges

8. ———— representations are useful for constructing 3D objects that possess translational, rotations or other symmetries.

(a) Buffer (b) Periodic

(c) Sweep (d) Spline

9. Identify the colors produced in beam penetration method.

(a) Red, Green, Blue, White

(b) Red, Orange, Yellow, Green

(c) Red, Green, Blue

(d) Green, Red, White, Orange

10. An RGB color system with 24 bits is storage per pixel is known as ————.

(a) Color CRT (b) True-color system

(c) RGB monitor (d) Color- Depth

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) What are the video displaying devices used in graphics? Explain.

Or

(b) Describe the properties of circle.

12. (a) Elaborate the basic attributes of line attributes.

Or

(b) Summarize the two-dimensional rotation with diagram.

13. (a) What are the composite transformations? Discuss.

Or

(b) Point out the viewing co-ordinate reference frame with diagram.

14. (a) Explain the steps to input of graphical data.

Or

(b) How the 3D rotation transformation works?

15. (a) Bring out the steps of a depth-buffer method.

Or

(b) Distinguish between the parallel and perspective projection.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Examine the expressions for Midpoint circle algorithm.

Or

(b) List out the input devices and explain any two of them.

17. (a) Outline the various types of character attributes.

Or

(b) Illustrate the Scaling an object with 2D transformation.

18. (a) Draw and explain the Sutherland-Hodgman polygon clipping algorithm.

Or

(b) Elaborate the window-to-viewport coordinate transformation.

19. (a) Discuss the graphical input functions of interactive input methods.

Or

(b) Evaluate the scaling in three dimensional geometric and modeling transformations.

20. (a) Demonstrate the concept of RGB color model.

Or

(b) Explain the purpose of 3D viewing pipeline.

———————

(7 pages) **Reg. No. :** .....

Code No. : 10509 E **Sub. Code : CACS 11/ CASE 11**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

First Semester

Computer Science / Software Engineering

DISCRETE MATHEMATICS

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which of the following relations is reflexive but not transitive for the set $T = \{7, 8, 9\}$?

   (a) $R = \{(7,7), (8,8), (9,9)\}$

   (b) $R = \{(7,8), (8,7), (8,9)\}$

   (c) $R = \{0\}$

   (d) $R = \{(7,8), (8,8), (8,9)\}$

2. $(a_1, a_2) \in R$ implies that $(a_2, a_1) \in R$, for all $a_1, a_2 \in A$. This condition is for which of the following relations?

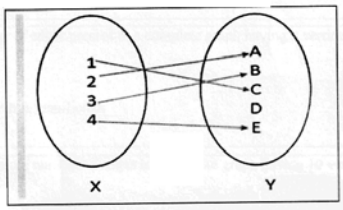
(a) Equivalence relation

(b) Reflexive relation

(c) Symmetric relation

(d) Universal relation

3. The following figure depicts which type of function?



(a) one-one (b) onto

(c) many-one (d) both one-one are

4. A function $f : N \to N$ is defined by $f(x) = x^2 + 12$. What is the type of function here?

(a) bijective

(b) surjective

(c) injective

(d) neither surjective nor injective

5. The compound propositions p and q are called logically equivalent if ———— is a tautology.

(a) $p \leftrightarrow q$ (b) $p \rightarrow q$

(c) $\neg(p \vee q)$ (d) $\neg p \vee q$

6. If A is any statement, then which of the following is a tautology.

(a) $A \wedge F$ (b) $A \vee F$

(c) $A \vee \neg A$ (d) $A \wedge T$

7. The matrix which follows the condition m>n is called as ————

(a) vertical matrix (b) horizontal matrix

(c) diagonal matrix (d) square matrix

8. Which of the following is not a type of matrix?

(a) Scalar matrix (b) Diagonal matrix

(c) Symmetric matrix (d) Minor matrix

9. What is the number of edges present in a complete graph having n vertices?

(a) $(n*(n+1))/2$

(b) $(n*(n-1))/2$

(c) n

(d) Information given is insufficient

10. What is the maximum number of edges in a bipartite graph having 10 vertices?

(a) 24 (b) 21

(c) 25 (d) 16

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Let $f : R \geq R : f(x) = \left(x^2 - 3x + 2\right)$. Find $f \circ f(x)$.

Or

(b) What is the meaning of closure operation or Relations?

12. (a) If, $f(x) = x^2$ and $g(x) = x + 3$. Then calculate the composition $g(f(x))$ and $f(g(x))$.

Or

(b) What is the Composition of Functions?

13. (a) Prove $(A \vee B) \wedge [(\neg A) \wedge (\neg B)]$ is a contradiction.

Or

(b) What are the four laws of formal logic?

14. (a) What is a Singular Matrix? Is the following matrix is singular matrix? $\begin{pmatrix} 3 & 6 \\ 2 & 4 \end{pmatrix}$.

Or

(b) Find the adjoint of given matrix $\begin{bmatrix} 2 & -1 & 3 \\ 0 & 5 & 2 \\ 1 & -1 & 2 \end{bmatrix}$.

15. (a) Explain the following

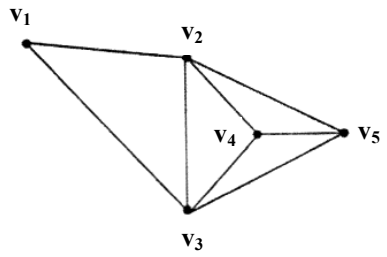
(i) Complete Graph

(ii) Undirected Graph

(iii) Tree

Or

(b) Draw the sub-graphs of a given graph .



PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Let $f : \{2,3,4,5\} \geq \{3,4,5,9\}$ and $g : \{3,4,5,9\} \geq \{7,11,15\}$ be functions defined as $f(2) = 3,\ f(3) = 4, f(4) = f(5) = 5$ and $g(3) = g(4) = 7$ and $g(5) = g(9) = 11$. Find $g \circ f(x)$.

Or

(b) How the relation represented by matrix?

17. (a) How do you know if a function composition is commutative?

Or

(b) Find $fg(3)$ if $f(x) = 2x$ and $g(x) = x + 1$.

18. (a) Prove $[(A \to B) \wedge A] \to B$ is a tautology.

Or

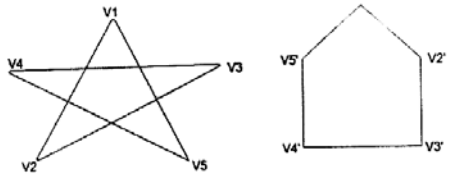
(b) Prove $(A \vee B) \wedge [(\neg A) \wedge (\neg B)]$ is contradiction.

19. (a) Find the determination of given matrix. $\begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix}$.

Or

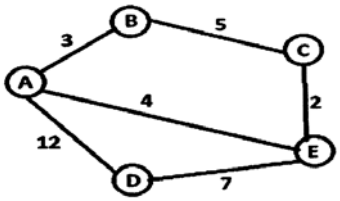
(b) Find the matrix inverse of the matrix $A = \begin{bmatrix} 4 & -2 & 1 \\ 5 & 0 & 3 \\ -1 & 2 & 6 \end{bmatrix}$.

20. (a) Show that the graphs G and G' mentioned above are isomorphic.



Or

(b) Find the adjacency matrix of the following graph.



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(6 pages) **Reg. No. :** .....

Code No. : 10510 E **Sub. Code : CACM 11**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

First/Third Semester

Computer Science — Allied

INTRODUCTION TO COMPUTERS

(For those who joined in July 2021–2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Transistor belonged to which of the following generation of computers ————————?

   (a) First (b) Second

   (c) Third (d) Fourth

2. In a computer, which unit is responsible for processing data and is also called the electronic brain of the computer ————————?

   (a) Hard disk (b) RAM

   (c) ROM (d) CPU

3. CD Rom is a ————————

(a) Semi conductor memory

(b) Memory register

(c) Megnetic memory

(d) None

4. DVD is an example of ————————

(a) Solid state storage devices

(b) Output device

(c) Hard disk

(d) Optical disk

5. JPEG may be expanded as ————————

(a) Joint photographic experts group

(b) Joint physical experts group

(c) Joint physical exports group

(d) None of the above

6. ———————— is an application that allows you to send and receive messages over cell phones

(a) Animated service

(b) Message service

(c) MMS

(d) Multimedia

7. Which of the following is not an operating system ————————?

(a) DOS (b) Windows

(c) Linux (d) Pascal

8. Which is the full name of FAT ————————?

(a) File attribute table

(b) File allocation table

(c) Format allocation table

(d) Font attribute table

9. The best products to sell in B2C E. commerce are ————————

(a) Small products (b) Digital products

(c) Fresh products (d) None

10. ———————— is the computer to computer exchange of business documents in a standard electronic format between business partners

(a) Electronic data interchange

(b) Smart card

(c) Blue tooth

(d) None

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write down and give a brief note on first, second and third generation of computers.

Or

(b) Give a brief note on careers in IT industry.

12. (a) List out the usage of USB drives.

Or

(b) Write short notes on optical disk.

13. (a) List out any three applications of multimedia.

Or

(b) Give short note on multimedia and internet.

14. (a) Define and give a note on operating system and software.

Or

(b) Write down any three functions of operating system.

15. (a) List out any four applications of internet.

Or

(b) What is mobile communication?

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Convert the following :

(i) $(45)_{10} = (?)_2, (?)_8 (?)_{16}$

(ii) $(100100)_2 = (?)_8, (?)_6$

Or

(b) Explain micro, mini, mainframe and super computer in detail.

17. (a) Define the usage of memory. What is memory hierarchy? What are the different types of RAM available?

Or

(b) Discuss in detail about magnetic tape and magnetic disk.

18. (a) Define multimedia. What are the building blocks available in multimedia?

Or

(b) Discuss in detail about virtual reality.

19. (a) Write short notes on the following

(i) Software piracy

(ii) Evolution of OS.

Or

(b) What are the different types of operating system available? Explain each one of them.

20. (a) Define internet. Explain evolution of internet and the basic terms used in internet in detail.

Or

(b) What is E-commerce? Write short notes on electronic data interchange.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10511 E **Sub. Code : CACM 21**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Second/Fourth Semester

Computer Science — Allied

PROGRAMMING IN C

(For those who joined in July 2021-2022 onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. ———————— is a keyword.

   (a) Odd (b) Even

   (c) Void (d) None

2. In C, 2 + 5 * 3 = ————————

   (a) 21 (b) 17

   (c) 10 (d) None

3. Which of the following is an entry controlled loop?

(a) while ( ) (b) do while ( )

(c) both (a) and (b) (d) none

4. How many times will the following loop execute?

for (i = 1 ; i < = 10 ; j = j – 1)

(a) Forever (b) Never

(c) 0 (d) 1

5. Collection of elements of similar datatype is called _____

(a) structure (b) union

(c) array (d) none

6. What is the maximum number of characters that can be held in the string variable _____

char str [40] ;

(a) 38 (b) 39

(c) 42 (d) None

7. Which of the following return-type cannot be used for a function in C?

(a) char* (b) struct

(c) void (d) none

8. Which of the following is not a storage class specifies in C?

(a) auto (b) volatile

(c) extern (d) static

9. Which of the following function is used to open a file in 'C'?

(a) open () (b) fopen ( )

(c) close ( ) (d) fseek ()

10. Pointer holds the ———————— of another variable.

(a) Value (b) Address

(c) Both (a) and (b) (d) None

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Define and give a brief note on Identifier and keywords.

Or

(b) What is symbolic constant? How to define symbolic constant?

12. (a) Write down any five difference between while ( ) and do-while ( ) statement.

Or

(b) Give a brief note on Goto statement.

13. (a) What is single dimensional array?

Or

(b) How to declare and initialize string?

14. (a) Give a short note on Union.

Or

(b) What is recursion? Give a brief note on it.

15. (a) What is pointer expression?

Or

(b) How do you open a file?

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain conditional operators and different types of Bit wise operators in detail.

Or

(b) What is arithmetic expression? Give a brief note on evaluation of expressions and precedence of arithmetic expressions.

17. (a) What are the different types of 'if' statements available in 'C'? Explain each one of them.

Or

(b) What is the use of Switch-Case Statement? Explain with syntax and example program.

18. (a) Define String. How to read strings from terminal and write string to screen?

Or

(b) Define array. Write short note on multidimensional array.

19. (a) Define structure. How to define and access structure?

Or

(b) What are the different category of functions available? Explain any two.

20. (a) Explain in detail about Error handling during I/O operations.

Or

(b) Define Pointer. How to access the address of available and access a variable through its pointer?

———————

(6 pages) **Reg. No. :** .....

Code No. : 10512 E **Sub. Code : CACS 31/ CASE 31**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Third Semester

Computer Science/Software Engineering – Allied

SCRIPTING LANGUAGES

(For those who joined in July 2021-2022 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL the questions.

Choose the correct answer :

1. HTML stands for

   (a) High Text Machine Language

   (b) Hyper Text and links Markup language

   (c) Hyper Text Markup language

   (d) None of these

2. Which of the following element is responsible for making the rest bold in HTML?

(a) <pre> (b) <a>

(c) <b> (d)

3. What is the default type of 'type' attribute of <input> element?

(a) Text

(b) Password

(c) Numerals

(d) Special Characters

4. How does the color attribute work?

(a) Changes color of the text

(b) Changes background color

(c) The color picker is defined by it

(d) Changes color of the text as well as background

5. MP3 format is not supported by _____.

(a) Firefox (b) Chrome

(c) Safari (d) Opera

6. Which of the following is not the attribute for <audio> element?

(a) Controls (b) Width

(c) Preload (d) Src

7. Which of the following is not javascript data types?

(a) Null type (b) Undefined type

(c) Number type (d) All of the mentioned

8. Which of the following object is the main entry point to all client-side JavaScript features and APIs?

(a) Position (b) Window

(c) Standard (d) Location

9. JQuery is a _____.

(a) Java Script method (b) Java Script library

(c) JSON library (d) PHP method

10. Which of the following sign is used as a shortcut for jQuery?

(a) the % sign (b) the & sign

(c) the $ sign (d) the @ sign

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Write about the creating simple web page.

Or

(b) Describe the document structure of HTML5 with example.

12. (a) Explain Text Area in HTML5.

Or

(b) How to create a application forms in HTML?

13. (a) Write a program for create web page to display a Video.

Or

(b) Discuss about playing audio in HTML.

14. (a) Why you should use java script?

Or

(b) What are the control statement in java script? Explain.

15. (a) Write about the JQuery functions.

Or

(b) Illustrate finding elements in jquery.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 600 words.

16. (a) Discuss about dynamic web page for your college.

Or

(b) Describe the documents structure of HTML5 with example.

17. (a) Explain Box model in HTML5.

Or

(b) How to create a drop-down list in HTML?

18. (a) Write a program for web page to display a Image.

Or

(b) Discuss about CSS COLOR in html..

19. (a) How to add a java script in HTML?

Or

(b) What are the LOOP statement in java script? Explain.

20. (a) Write about the JQuery Replacing data with example.

Or

(b) Illustrate Events in jquery with example.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10513 E **Sub. Code : CACS 41**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024

Fourth Semester

Computer Science — Allied

MACHINE LEARNING TECHNIQUES

(For those who joined in July 2021–2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL the questions.

Choose the correct answer :

1. The term machine learning was coined in which year?

(a) 1959 (b) 1960

(c) 1961 (d) 1962

2. ———————— is the machine learning algorithms that can be used with labeled data.

(a) Regression algorithms

(b) Clustering algorithms

(c) Association algorithms

(d) All of the above

3. ———————— is a disadvantage of decision trees.

(a) Decision trees are robust to outlier

(b) Decision trees are prone to be overfit

(c) Both (a) and (b)

(d) None of these

4. Following are the types of supervised learning

(a) Classification

(b) Regression

(c) Subgroup discovery

(d) All of the above

5. ———————— is a Python library for data wrangling and analysis.

(a) Numpy (b) Pandas

(c) Jnode (d) Jsnode

6. The ———— Notebook is an interactive environment for running code in the browser.

(a) Jupyter (b) Jnode

(c) Jsnode (d) Kyputer

7. Which of the following clustering requires merging approach?

(a) Partitional

(b) Hierarchical

(c) Naive Bayes

(d) None of the mentioned

8. Which of the following is not a type of association rule?

(a) Positive rule (b) Negative rule

(c) Sequential rule (d) Inverse rule

9. ———— is the task of assigning a label or class to a given text.

(a) Text Classification (b) Regression

(c) Mining (d) None of these

10. The Naive Bayes algorithm is a ———— machine learning algorithm.

(a) Supervised (b) Unsupervised

(c) Both (a) and (b) (d) None of these

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Why Machine Learning?

Or

(b) How Python language used to develop machine learning algorithm?

12. (a) Define Simple Linear Regression.

Or

(b) Illustrate binary logistic regression.

13. (a) What is gradient based algorithm?

Or

(b) List the Scikit-Learn Library for machine learning.

14. (a) How does Clustering works?

Or

(b) Is collaborative filtering algorithm supervised or unsupervised? Explain.

15. (a) What is text analysis example?

Or

(b) Discuss about the Challenges in text analysis.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Write about Framework for Developing Machine Learning Models.

Or

(b) What is data exploration in data visualization?

17. (a) Explain in detail about Multiple Linear Regression.

Or

(b) What is Credit Classification? Explain.

18. (a) Write and explain Gradient R Algorithm.

Or

(b) Why we need Advanced Regression Model?

19. (a) With example data explain K-Means clustering.

Or

(b) Discuss about Matrix factorization.

20. (a) Write in detail about Sentiment Classification.

Or

(b) Discuss text analysis with Tf-IDF Vectorization.

———————

(6 pages)

Reg. No. : .....

Code No. : 10514 E **Sub. Code : CSCS 31**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024.

Third Semester

Computer Science

Skill Based Subject – DIGITAL DESIGN

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)
Answer ALL questions.

Choose the correct answer :

1. What is the binary equivalent of $(0.8125)_{10}$?

   (a) $(0.0111)_2$ (b) $(0.1101)_2$

   (c) $(0.0101)_2$ (d) $(0.0011)_2$

2. Which of the following is equivalent to $AB + \overline{A}C$?

   (a) $AB + \overline{A}C + BC$ (b) $(A + B)(\overline{A} + C)$

   (c) $AB + BC$ (d) $\overline{A}C + BC$

3. Which code allows manufacturers to standardize computer hardware?

(a) BCD (b) Gray code

(c) ASCII (d) EBCDIC

4. How many fundamental products are there for two variables?

(a) 2 (b) 3

(c) 4 (d) 8

5. Which of the following is called data selector

(a) Multiplexer (b) Demultiplexer

(c) Flip Flop (d) Encoder

6. 2's complement of $(-68)_{10}$ is ————————

(a) 0011 1100 (b) 1011 0011

(c) 1100 0011 (d) 1011 1100

7. Which of the following is a bistable electronic circuit?

(a) Multiplexer (b) Demultiplexer

(c) Flip Flop (d) Encoder

8. The functional description of a sequential circuit is _____

(a) Finite State Machine

(b) Loop

(c) Mealy Model

(d) Moore Model

9. If one leg of NOR gate is ground, what will be the output if the other leg has data X?

(a) 1 (b) 0

(c) x (d) $\overline{X}$

10. What happens when shift/load is low?

(a) Serial input (b) Parallel input

(c) Serial output (d) Parallel output

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Convert

(i) $(3574)_8$ to binary

(ii) $(9AF)_{16}$ to decimal

Or

(b) Write a note on NAND gate as a universal logic gate.

12. (a) Simplify

$$Y = (A + B)\ (A^1(B^1 + C^1))^1 + A^1(B + C)$$

$$Y = (A + B)\ (\overline{\overline{A}\,(\overline{\overline{B}} + \overline{\overline{C}})}) + \overline{A}\,(B + C)$$

Or

(b) Give the simplest logic circuit for the following logic equation.

$$F(A,B,C,D) = \sum m(7) + d(10,11,12,13,14,15)$$

13. (a) Write a note on half adder.

Or

(b) Add $(37)_{10}$ and $(-115)_{10}$ in binary.

14. (a) Write a note on flip flops.

Or

(b) Write a note on D flip flop.

15. (a) Write a note on registers.

Or

(b) Give the sketch of a parallel in serial out register.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Convert

(i) $(175)_{10}$ to octal

(ii) $(23.6)_{10}$ to binary

Or

(b) Explain gray code.

17. (a) (i) Prove that

$$A(A^1 + C)\ (A^1B + C)\ (A^1BC + C^1) = 0$$

(ii) A truth table has low output for the first three input conditions: 000, 001 and 010. If all other inputs are high, what is the Product of Sums circuit?

Or

(b) Simplify using Karnaugh map and draw the Sum of Products circuit

$$F(A,B,C,D) = \sum m(3,4,5,7,9,13,14,15)$$

18. (a) Explain 7 segment decoder

Or

(b) Perform binary subtraction.

(i) $(83)_{10} - (16)_{10}$

(ii) $(68)_{10} - (-27)_{10}$

19. (a) Explain edge triggered RS flip flop.

Or

(b) Explain JK Master – Slave flop flop.

20. (a) Explain serial in-serial out register.

Or

(b) Explain the universal shift register.

———————

(6 pages)

Reg. No. : .....

Code No. : 10515 E **Sub. Code : CSCS 41**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024.

Fourth Semester

Computer Science

Skill Based Subject – COMPUTER ARCHITECTURE

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. Which of the following computer memory is fastest?

   (a) Register (b) Hard disk

   (c) RAM (d) None of the above

2. Which of the following format is used to store data?

(a) Decimal (b) Octal

(c) BCD (d) Hexadecimal

3. Computer address bus is ————————

(a) Multidirectional (b) Bidirectional

(c) Unidirectional (d) None of the above

4. In ———————— the operand is specified in the instruction itself.

(a) Immediate addressing

(b) Register mode

(c) Implied addressing

(d) Register Indirect

5. The booth algorithm is a multiplication algorithm that allows us to multiply the two signed binary integers in ————————, respectively.

(a) 2's complement (b) 1's complement

(c) 0's complement (d) none of these

6. What is the 2s complement of 13?

(a) 1111 00110 (b) 0111 0011

(c) 1111 0011 (d) 1111 0001

7. Which of the following provides input interface?

(a) Mouse (b) Keyboard

(c) Scanner (d) All of these

8. DMA stands for ————————

(a) Direct Memory Access

(b) Dial Memory Access

(c) Direct More Access

(d) None of these

9. When power is switched off which memory loses its data?

(a) Non-Volatile Memory

(b) Volatile Memory

(c) Both (a) and (b)

(d) None of the above

10. Which of the following is correct example for Auxiliary Memory?

(a) Magnetic disks (b) Tapes

(c) Flash memory (d) Both (a) and (b)

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) What is Instruction codes?

Or

(b) Explain Index Register in Computer.

12. (a) How the stack used in computer memory?

Or

(b) Discuss any one Addressing mode.

13. (a) Explain addition two 2's complement nos.

Or

(b) What you mean floating point arithmetic number? Explain.

14. (a) Explain Input Interface with neat figure.

Or

(b) How the Output Interface are works in Computer System?

15. (a) What are the memory hierarchy?

Or

(b) Define Auxiliary Memory.

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain the following

(i) Computer Instruction

(ii) Instruction cycle

Or

(b) Discuss about addressing sequencing.

17. (a) Write about the Instruction formats.

Or

(b) How data transfer and manipulate?

18. (a) Discuss about BOOTH multiplication algorithms.

Or

(b) How to divide two 2's complement number? Give example.

19. (a) Explain in details about Asynchronous data transfer.

Or

(b) Discuss in details about DMA.

20. (a) What is the use of cache memory? Explain.

Or

(b) Draw virtual memory concept diagram and explain.

———————

Reg. No. : .....

Code No. : 10516 B **Sub. Code : CNCS 31/ CNSE 31**

U.G. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Third Semester

Computer Science/Software Engineering

Non Major Elective – FUNDAMENTALS OF INTERNET AND EMERGING TECHNOLOGIES

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer.

1. இயங்கும் நிரல் வழிமுறைகளை வைத்திருக்க பின்வரும் எது பயன்படுத்தப்படுகிறது?

(அ) முதன்மை சேமிப்பு

(ஆ) மெய்நிகர் சேமிப்பு

(இ) உள் சேமிப்பு

(ஈ) சிறிய சாதனங்கள்

Which of the following is used to hold running program instructions?

(a) Primary Storage (b) Virtual Storage

(c) Internal Storage (d) Minor Devices

2. கணினியின் மூளை ————————

(அ) கட்டுப்பாட்டு அலகு

(ஆ) எண்கணிதம் மற்றும் தர்க்க அலகு

(இ) மத்திய செயலாக்க அலகு

(ஈ) நினைவகம்

Brain of computer is ————————

(a) Control unit

(b) Arithmetic and Logic unit

(c) Central Processing Unit

(d) Memory

3. தகவல் அமைப்புகள் திட்டமிடலுக்கான ஒரு விரிவான வணிக செயல்முறை உந்துதல் முறை ————————

(அ) விண்ணப்ப போர்ட் ஃபோலியோ

(ஆ) தகவல் தொழில்நுட்ப கட்டமைப்பு

(இ) வணிக அமைப்புகள் திட்டமிடல்

(ஈ) முக்கியமான வெற்றி காரணிகள்

A comprehensive business process-driven methodology for information systems planning is _____

(a) Application portfolio

(b) Information technology architecture

(c) Business systems planning

(d) Critical success factors

4. சேவையகங்கள் என்பது _____ உடன் இணைக்கப்பட்ட பிற கணினிகளுக்கு வளங்களை வழங்கும் கணினிகள்

(அ) கிளையன்ட் (ஆ) மெயின்பிரேம்

(இ) சூப்பர் கம்ப்யூட்டர் (ஈ) நெட்வொர்க்

Servers are computers that provide resources to other computers connected to a _____

(a) Client (b) Mainframe

(c) Supercomputer (d) Network

5. _____ அடுக்கு ஒரு ஹாப் (முனை) இருந்து அடுத்த சட்டங்கள் நகர்த்த பொறுப்பு.

(அ) போக்குவரத்து

(ஆ) தரவு இணைப்பு

(இ) உடல்

(ஈ) மேலே எதுவும் இல்லை

The ———————— layer is responsible for moving frames from one hop (node) to the next.

(a) transport (b) data link

(c) physical (d) none of the above

6. OSI மாதிரியானது ———————— அடுக்குகளைக் கொண்டுள்ளது.

(அ) மூன்று (ஆ) நான்கு

(இ) ஐந்து (ஈ) ஏழு

The OSI model consists of ———————— layers

(a) Three (b) Four

(c) Five (d) Seven

7. ———————— இப்போது கிளவுட் கம்ப்யூட்டிங் என்று அழைக்கப்படும் பல குணாதிசயங்களைக் கொண்டுள்ளது.

(அ) இணையம்

(ஆ) மென்பொருள்கள்

(இ) இணைய சேவை

(ஈ) குறிப்பிடப்பட்டுள்ள அனைத்தும்

———————— has many of the characteristics of what is now being called cloud computing.

(a) Internet

(b) Software's

(c) Web Service

(d) All of the mentioned

8. பின்வருவனவற்றில் கிளவுட் கம்ப்யூட்டிங் என அடையாளம் காணக்கூடியது எது?

(அ) இணையப் பயன்பாடுகள்

(ஆ) இன்ட்ராநெட்

(இ) ஹடூப்

(ஈ) குறிப்பிடப்பட்ட அனைத்தும்

Which of the following can be identified as cloud?

(a) Web Applications

(b) Intranet

(c) Hadoop

(d) All of the mentioned

9. ———————— என்பது நெட்வொர்க்குகளின் நெட்வொர்க் ஆகும்.

(அ) இணையம் (ஆ) இன்ட்ராநெட்

(இ) எக்ஸ்ட்ராநெட் (ஈ) அர்பானெட்

———————— is network of networks.

(a) Internet (b) Intranet

(c) Extranet (d) Arpanet

10. WWW என்பது ———————— ஐ குறிக்கிறது.

(அ) உலகளாவிய ஆயுதம்

(ஆ) உலகளாவிய விண்டோஸ்

(இ) உலகளாவிய வலை

(ஈ) உலகளாவிய எழுத்தாளர்கள்

WWW stands for ————————

(a) World Wide Weapon

(b) World Wide Windows

(c) World Wide Web

(d) World Wide Writers

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (அ) கணினிகள் வகைப்பாடுகளை விரிவுபடுத்தவும்.

Elaborate the classifications of computers.

Or

(ஆ) கணினிகளின் பண்புகள் என்ன? விளக்குக.

What are the characteristics of computers? Explain.

12. (அ) ஜாவா நிரலாக்கத்தின் நன்மைகளை விவரிக்கவும்.

Describe the advantages of java programming.

Or

(ஆ) ஸ்விஃப்ட் மொழிக்கும் கோட்லின் மொழிக்கும் இடையில் வேறுபடுத்திக் காட்டுங்கள்.

Distinguish between the Swift language and Kotlin Language.

13. (அ) நெட்வொர்க்கிங்கிற்குப் பயன்படுத்தப்படும் வன்பொருளை விளக்குங்கள்.

Explain the hardware used for networking.

Or

(ஆ) லோக்கல் ஏரியா நெட்வொர்க்கின் (LAN) அடிப்படைக் கருத்துகளைக் குறிப்பிடவும்.

Mention the basic concepts of Local Area Network (LAN).

14. (அ) பயோமெட்ரிக் அணுகல் கட்டுப்பாட்டின் செயல்பாடுகளை சுட்டிக்காட்டவும்.

Point out the functions of biometric access control.

Or

(ஆ) பாதுகாப்பின் அடிப்படைக் கொள்கைகளைத் தீர்மானிக்கவும்.

Determine the fundamental principles of security.

15. (அ) நல்லொழுக்க நெறிமுறைகள் பற்றிய குறிப்பை எழுதுங்கள்.

Write a note on virtue ethics.

Or

(ஆ) செயற்கை நுண்ணறிவின் பயன்பாடுகளை சுருக்கவும்.

Summarize the applications of artificial intelligence.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (அ) கணினியின் அடிப்படை கட்டமைப்பைப் பற்றி விவாதிக்கவும்.

Discuss the basic structure of a computer.

Or

(ஆ) ஐந்து புலன்களின் மனித திறனைக் கணக்கிடுங்கள்.

Enumerate the human capability of five senses.

17. (அ) C++ உடன் பொருள் சார்ந்த நிரலாக்கத்தின் முக்கிய அம்சங்களை ஆராயவும்.

Examine the salient features of object oriented programming with C++.

Or

(ஆ) பயன்பாட்டு மென்பொருள் மற்றும் தொகுப்பு மென்பொருளை ஒப்பிடுக.

Compare the application software and package software.

18. (அ) நேர்த்தியான வரைபடத்துடன் முறுக்கப்பட்ட ஜோடி கேபிளை விளக்கவும்.

Illustrate the twisted pair cable with neat diagram.

Or

(ஆ) ஹெல்த்கேரில் பெரிய தரவு பகுப்பாய்வுகளைத் தீர்மானிக்கவும்.

Determine the big data analytics in healthcare.

19. (அ) ஃபயர்வால் மற்றும் தீம்பொருளை வேறுபடுத்துங்கள்.

Differentiate between the firewall and malware.

Or

(ஆ) பொது மேகம் மற்றும் கலப்பின கிளவுட் செயல்பாடுகளை மதிப்பிடவும்.

Evaluate the functions of public cloud and hybrid cloud.

20. (அ) வங்கி மற்றும் நிதி மோசடி கண்டறிதலின் நோக்கத்தை கோடிட்டுக் காட்டுங்கள்.

Outline the purpose of banking and financial fraud detection.

Or

(ஆ) தன்னாட்சி கார் மற்றும் டிரைவர் இல்லாத கார் இடையே உள்ள வித்தியாசத்தை பகுப்பாய்வு செய்யுங்கள்.

Analysis the difference between the autonomous car and driverless car.

———————

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Code No. : 10516 E **Sub. Code : CNCS 31/ CNSE 31**

U.G. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Third Semester

Computer Science/Software Engineering

Non Major Elective – FUNDAMENTALS OF INTERNET AND EMERGING TECHNOLOGIES

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer.

1. Which of the following is used to hold running program instructions?

   (a) Primary Storage

   (b) Virtual Storage

   (c) Internal Storage

   (d) Minor Devices

2. Brain of computer is ————————

(a) Control unit

(b) Arithmetic and Logic unit

(c) Central Processing Unit

(d) Memory

3. A comprehensive business process-driven methodology for information systems planning is ————————

(a) Application portfolio

(b) Information technology architecture

(c) Business systems planning

(d) Critical success factors

4. Servers are computers that provide resources to other computers connected to a ————————

(a) Client (b) Mainframe

(c) Supercomputer (d) Network

5. The ———————— layer is responsible for moving frames from one hop (node) to the next.

(a) transport

(b) data link

(c) physical

(d) none of the above

6. The OSI model consists of ———————— layers

(a) Three (b) Four

(c) Five (d) Seven

7. ———————— has many of the characteristics of what is now being called cloud computing.

(a) Internet

(b) Software's

(c) Web Service

(d) All of the mentioned

8. Which of the following can be identified as cloud?

(a) Web Applications

(b) Intranet

(c) Hadoop

(d) All of the mentioned

9. ———————— is network of networks.

(a) Internet (b) Intranet

(c) Extranet (d) Arpanet

10. WWW stands for ————————

(a) World Wide Weapon

(b) World Wide Windows

(c) World Wide Web

(d) World Wide Writers

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Elaborate the classifications of computers.

Or

(b) What are the characteristics of computers? Explain.

12. (a) Describe the advantages of java programming.

Or

(b) Distinguish between the Swift language and Kotlin Language.

13. (a) Explain the hardware used for networking.

Or

(b) Mention the basic concepts of Local Area Network (LAN).

14. (a) Point out the functions of biometric access control.

Or

(b) Determine the fundamental principles of security.

15. (a) Write a note on virtue ethics.

Or

(b) Summarize the applications of artificial intelligence.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss the basic structure of a computer.

Or

(b) Enumerate the human capability of five senses.

17. (a) Examine the salient features of object oriented programming with C++.

Or

(b) Compare the application software and package software.

18. (a) Illustrate the twisted pair cable with neat diagram.

Or

(b) Determine the big data analytics in healthcare.

19. (a) Differentiate between the firewall and malware.

Or

(b) Evaluate the functions of public cloud and hybrid cloud.

20. (a) Outline the purpose of banking and financial fraud detection.

Or

(b) Analysis the difference between the autonomous car and driverless car.

———————

Reg. No. : .....

Code No. : 10517 B **Sub. Code : CNCS 32/ CNSE 32**

U.G. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Third Semester

Computer Science/ Software Engineering

Non Major Elective — BASIC PROGRAMMING DESIGN

(For those who joined in July 2021–2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. ஒரு செய்கையின் தீர்வுக்காக செய்யும் படிப்படியான செயல் முறை ————————

(அ) செயல் வரைவு (ஆ) பாய்வு நிரல் படம்

(இ) நெறி முறை (ஈ) ஏதும் இல்லை

Step by step procedure to solve the problem is called ————————

(a) program (b) flow chart

(c) algorithm (d) none

2. பாய்வு நிரல் படத்தில், தொடக்கம் மற்றும் முடிவுக்கு பயன்டுத்தப்படும் சின்னம் ————————

(அ) டய்மண்ட் (ஆ) ஓவல்

(இ) செவ்வகம் (ஈ) ஏதும் இல்லை

In a flowchart, the symbol used for start and end is ————————

(a) diamond (b) oval

(c) rectangle (d) none

3. வழு என்றால் ————————

(அ) பிழை

(ஆ) குறிமுறை

(இ) (அ) மற்றும் (ஆ)

(ஈ) ஏதும்இல்லை

Bug means ————————

(a) error (b) code

(c) both (a) and (b) (d) none

4. இது ஒரு நிரலாக்கம், பொதுவாக இது பெரிய செயல்வரைவை நாம் சமாளிக்கக் கூடிய மற்றும் சிறிய செயல் வரைவாக மாற்றக்கூடியது ————————

(அ) கட்டமைக்கப்படாத

(ஆ) கட்டமைக்கப்பட்ட

(இ) (அ) மற்றும் (ஆ)

(ஈ) ஏதும் இல்லை

———————— programming is a type of programming that generally converts large or complex programs into more manageable and small pieces of code.

(a) unstructured

(b) structured

(c) both (a) and (b)

(d) none

5. முதலாம் தலைமுறை கணினியின் உறுப்பு கூறு _____

(அ) ஐசி

(ஆ) டயோட்

(இ) வீ.எல்.எஸ்.ஐ

(ஈ) வேக்யூம் டியூப்

The components used in first generation computer _____

(a) IC (b) Diode

(c) VLSI (d) Vaccum tube

6. நிரலாக்க மொழியின் சிறப்பம்சங்கள் _____

(அ) பெயர்வுதிறன்

(ஆ) பராமரிக்ககூடிய தன்மை

(இ) எளிதாக பயன்படுத்துதல்

(ஈ) இவை அனைத்தும்

Features of good programming language _____

(a) portability

(b) maintainability

(c) ease to use

(d) all the above

7. வன்பொருளுக்கு எடுத்துக்காட்டு ————————

(அ) மைய செயலகம்

(ஆ) விசைபலகை

(இ) சுட்டி

(ஈ) இவை அனைத்தும்

Example for hardware ————————

(a) CPU

(b) Keyboard

(c) Mouse

(d) all the above

8. ———————— இது ஒரு கணினி மென்பொருள், இது குறிப்பிட்ட செயல்பாடுகள் நேரடியாக பயனாளர்களுக்கு சென்று சேரும்.

(அ) பயன்பாட்டு மென்பொருள்

(ஆ) அமைப்பு மென்பொருள்

(இ) (அ) மற்றும் (ஆ)

(ஈ) ஏதும் இல்லை

———————— is a computer software that performs a specific function directly for an end user.

(a) application software

(b) system software

(c) both (a) and (b)

(d) none

9. ———————— இது ஒன்றோடு ஒன்று இணைக்கப்பட்ட அமைப்பு இணையதளம் மூலமாக வலைபக்கத்தை அணுகுவதற்கு உதவுவது.

(அ) இணைய சேவை வழங்குபவர்

(ஆ) வையவிரிவலை

(இ) (அ) மற்றும் (ஆ)

(ஈ) ஏதும் இல்லை

———————— is an interconnected system of public web page accessible through the internet.

(a) ISP

(b) WWW

(c) Both (a) and (b)

(d) None

10. ஒரு ———————— என்பது கணினி செயல் வரைவு அது தன்மை பிரிதுஎடுத்து, பயணரின் அனுமதி இல்லாமல் கணினியை பாதிக்கலாம்.

(அ) நச்சுநிரற் கொல்லி

(ஆ) நச்சு நிரல்

(இ) (அ) மற்றும் (ஆ)

(ஈ) ஏதும் இல்லை

A ———————— is a computer program that can copy itself and infect a computer without permission or knowledge of the user.

(a) Antivirus

(b) Virus

(c) Both (a) and (b)

(d) None

PART B — (5 × 5 = 25 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (அ) பாய்வு நிரல் படத்தில் உபயோகப்படுத்தப்படும் பல்வேறு சின்னம் எவை?

What are the different symbols used in flow chart?

Or

(ஆ) பாய்வு நிரல் படம் பற்றி வரையறு. அதன் முக்கியத்துவம் மற்றும் வரம்புகள் பற்றி விவரி.

Define flow chart. Give a brief note on its importance and limitations.

12. (அ) நல்ல நிரலாக்கத்தின் பண்புகள் எவை?

List out the characteristics of good programming.

Or

(ஆ) கட்டமைக்கப்பட்ட மற்றும் கட்டமைக்கப்படாத நிரலாக்கத்தின் பண்புகளை வேறுபடுத்துக.

Differentiate structured versus unstructured programming.

13. (அ) நிரலாக்க மொழியின் பரிணாமங்கள் பற்றி சிறு குறிப்பு வரைக.

Give a brief note on evolution of programming language.

Or

(ஆ) நிரலாக்க மொழியின் வகைபாடு பற்றி சிறு குறிப்பு வரைக.

Write short note on classification of programming language.

14. (அ) வன்பொருள் மற்றும் மென்பொருள் இடையே உள்ள தொடர்பை விவரி.

Describe the relationship between hardware and software.

Or

(ஆ) ஷேர்வேர் மற்றும் தனி உரிமை மென்பொருள் என்றால் என்ன?

What do you mean by shareware and proprietary software?

15. (அ) மையவிரிவலை மற்றும் இணைய முகவரியின் நன்மைகள் யாவை?

List out the usage of website and URL.

Or

(ஆ) நச்சுநிரல் தடுப்பி மென்பொருளை எவ்வாறு பயன்படுத்துவது?

How to use antivirus software?

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (அ) முடிவுகால அட்டவணை பற்றி விரிவாக விவாதி.

Discuss in detail about decision table.

Or

(ஆ) கணினி நிரலை எவ்வாறு உருவாக்குவாய்? நிரல் ஆவணங்களின் சுழற்சி பற்றி விவரி.

How to develop computer program? Explain program development cycle in detail.

17. (அ) சோதனை மற்றும் வழுநீக்குதல் என்றால் என்ன? சோதனை முறைகள் ஒவ்வொன்றையும் விவரி.

What do you mean by testing and debugging? Explain testing approaches in detail.

Or

(ஆ) செயல் வரைவு ஆவணங்கள் பற்றி விரிவாக விவரி.

Explain program documentation in detail.

18. (அ) நல்ல நிரலாக்க மொழியின் அம்சங்கள் ஏதேனும் எட்டு பற்றி வரிசைப்படுத்தி விவரி.

List out and explain any eight features of good programming language.

Or

(ஆ) முதல், இரண்டாம், மூன்றாம், நான்காம் மற்றும் ஐந்தாம் கணினி தலைமுறைகள் பற்றி விரிவாக விவரி.

Explain first, second, third, fourth and fifth generation in detail.

19. (அ) பயன்பாட்டு மென்பொருள் மற்றும் அமைப்பு மென்பொருள் பற்றி விவரி.

Discuss in detail about application software and system software.

Or

(ஆ) கீழ்கண்டவை பற்றி சிறு குறிப்பு வரைக :

(i) நிலைபொருள்

(ii) நிகழ்மானம்

(iii) இலவச பொருள்

(iv) பொதுகலம் மென்பொருள்

(v) வணிக மென்பொருள்

Write short note on the following :

(i) Firmware

(ii) Liveware

(iii) Freeware

(iv) Public domain software

(v) Commercial software

20. (அ) இணைய தளத்தின் பரிணாம வளர்ச்சி மற்றும் இணைய தேடுதளம் பற்றி விவரி.

Describe evolution of internet and search engine in detail.

Or

(ஆ) இணைய தளத்துடன் எவ்வாறு தொடர்பு கொள்வீர்? விளக்குக.

How to get connected to Internet? Explain.

———————

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U.G. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Third Semester

Computer Science/ Software Engineering

Non Major Elective — BASIC PROGRAMMING DESIGN

(For those who joined in July 2021–2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. Step by step procedure to solve the problem is called ————————

(a) program (b) flow chart

(c) algorithm (d) none

2. In a flowchart, the symbol used for start and end is ————————

(a) diamond (b) oval

(c) rectangle (d) none

3. Bug means ————————

(a) error (b) code

(c) both (a) and (b) (d) none

4. ———————— programming is a type of programming that generally converts large or complex programs into more manageable and small pieces of code.

(a) unstructured (b) structured

(c) both (a) and (b) (d) none

5. The components used in first generation computer ————————

(a) IC (b) Diode

(c) VLSI (d) Vaccum tube

6. Features of good programming language ————————

(a) portability (b) maintainability

(c) ease to use (d) all the above

7. Example for hardware ————————

(a) CPU (b) Keyboard

(c) Mouse (d) all the above

8. ———————— is a computer software that performs a specific function directly for an end user.

(a) application software

(b) system software

(c) both (a) and (b)

(d) none

9. ———————— is an interconnected system of public web page accessible through the internet.

(a) ISP (b) WWW

(c) Both (a) and (b) (d) None

10. A ———————— is a computer program that can copy itself and infect a computer without permission or knowledge of the user.

(a) Antivirus (b) Virus

(c) Both (a) and (b) (d) None

PART B — (5 × 5 = 25 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) What are the different symbols used in flow chart?

Or

(b) Define flow chart. Give a brief note on its importance and limitations.

12. (a) List out the characteristics of good programming.

Or

(b) Differentiate structured versus unstructured programming.

13. (a) Give a brief note on evolution of programming language.

Or

(b) Write short note on classification of programming language.

14. (a) Describe the relationship between hardware and software.

Or

(b) What do you mean by shareware and proprietary software?

15. (a) List out the usage of website and URL.

Or

(b) How to use antivirus software?

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss in detail about decision table.

Or

(b) How to develop computer program? Explain program development cycle in detail.

17. (a) What do you mean by testing and debugging? Explain testing approaches in detail.

Or

(b) Explain program documentation in detail.

18. (a) List out and explain any eight features of good programming language.

Or

(b) Explain first, second, third, fourth and fifth generation in detail.

19. (a) Discuss in detail about application software and system software.

Or

(b) Write short note on the following :

(i) Firmware

(ii) Liveware

(iii) Freeware

(iv) Public domain software

(v) Commercial software

20. (a) Describe evolution of internet and search engine in detail.

Or

(b) How to get connected to Internet? Explain.

———————

(8 pages) **Reg. No. :** .....

Code No. : 10518 B **Sub. Code : CNCS 41/ CNSE 41**

U.G. (CBCS) DEGREE EXAMINATION, APRIL 2024

Fourth Semester

Computer Science / Software Engineering

Non-Major Elective – HTML

(For those who joined in July 2021 – 2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. இணையதளத்தின் முதல் பக்கம் _____ என அழைக்கப்படுகிறது.

(அ) சின்னம் (ஆ) நல்லெண்ணம்

(இ) முகப்புப்பக்கம் (ஈ) மிகை இணைப்பு

The first page of a website is called _____.

(a) Logo (b) goodwill

(c) homepage (d) hyperlink

2. இலக்கின் இருப்பிடத்தைக் கண்டறிய பின்வருவனவற்றில் எது பயன்படுத்தப்படவில்லை?

(அ) <a> இன் பெயர் பண்புக்கூறு

(ஆ) <a> இன் href பண்புக்கூறு

(இ)
 ஐடி பண்புக்கூறு

(ஈ) தலைப்பு குறிச்சொல்லின் ஐடி பண்பு

Which of the following is not used to identify the location of a target?

(a) type attribute of <a>

(b) href attribute of <a>

(c) id attribute of <a>

(d) id attribute of heading tag

3. <b> குறிச்சொல் அதனுள் உள்ள உரையை _____ ஆக மாற்றும்.

(அ) நீல நிறம் (ஆ) கருப்பு நிறம்

(இ) தடித்த எழுத்துரு (ஈ) பெரிய அளவு

<b> tag displays text within it in _____.

(a) blue color (b) black color

(c) bold font (d) bigger size

4. பக்கத்தின் உரை ஸ்க்ரோல் செய்யும் போது திரையில் இருக்கும் வலைப்பக்கத்தின் நிலையான பகுதி எது?

(அ) முகப்பு (ஆ) அடிப்படை

(இ) பேனர் (ஈ) முன்னுரை

Which is a fixed part of the webpage that will stay on the screen when the text of the page is scrolled?

(a) Home (b) Base

(c) Banner (d) Prologue

5. பட்டியல் உருப்படி (item) காண்பிக்க எந்த குறிச்சொல் பயன்படுத்தப்படுகிறது?

(அ) (ஆ)

(இ) (ஈ) <list>

Which tag is used for displaying list items?

(a) (b)

(c) (d) <list>

6. அட்டவணையில் வரிசையைச் செருக எந்த குறிச்சொல் பயன்படுத்தப்படுகிறது?

(அ) <table> (ஆ) <td>

(இ) <row> (ஈ) <tr>

Which tag is used to insert a row in a table?

(a) <table> (b) <td>

(c) <row> (d) <tr>

7. சட்டத்தில் காட்டப்பட வேண்டிய HTML ஆவணத்தின் URL ஐ எந்த பண்புக்கூறு குறிப்பிடுகிறது?

(அ) முகவரி (ஆ) src

(இ) பெயர் (ஈ) கோப்பு

Which attribute specifies the URL of the HTML document to be displayed in the frame?

(a) Address (b) src

(c) name (d) file

8. பின்வருவனவற்றில் எது பிரேம்களின் அளவிற்கு அலகாகப் பயன்படுத்தப்படவில்லை?

(அ) பிக்சல் (ஆ) சதவீதம்

(இ) மீட்டர் (ஈ) பின்னம்

Which of the following is not used as unit for the size of the frames?

(a) Pixel (b) Percentage

(c) Metre (d) Fraction

9. _____ புள்ளிகள் ஒரு அங்குலத்திற்கு சமம்.

(அ) 24 (ஆ) 36

(இ) 48 (ஈ) 72

_____ points is equivalent to one inch.

(a) 24 (b) 36

(c) 48 (d) 72

10. பிரேம்களின் தொகுப்பு _____ குறிச்சொல்லைப் பயன்படுத்தி வரையறுக்கப்படுகிறது.

(அ) <frame> (ஆ) <frameset>

(இ) <form> (ஈ) <fraction>

A set of frames is defined using _____ tag.

(a) <frame> (b) <frameset>

(c) <form> (d) <fraction>

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions by choosing (a) or (b).
Each answer should not exceed 250 words.

11. (அ) HTML இன் வரலாற்றை தருக.

Give the History of HTML.

Or

(ஆ) ஆங்கர் டேக்கில் ஒரு குறிப்பை எழுதவும்.

Write a note on Anchor tag.

12. (அ) தாவல் அமைப்புகளை விளக்குக.

Explain tab settings.

Or

(ஆ) வண்ணமயமான வலைப்பக்கத்தைக் காட்ட HTML குறியீட்டை எழுதவும்.

Write HTML code to display a colourful web page.

13. (அ) அட்டவணையை உருவாக்கப் பயன்படுத்தப்படும் குறிச்சொற்களைப் பட்டியலிடுக.

List out the tags used to create a table.

Or

(ஆ) ஆர்டர் செய்யப்பட்ட பட்டியலை உருவாக்கப் பயன்படுத்தப்படும் குறிச்சொற்களை பட்டியலிடுக.

List out the tags used to create an ordered list.

14. (அ) பிரேம்செட் வரையறை தருக.

Give Frameset definition.

Or

(ஆ) கீழ்தோன்றும் பட்டியலை (Drop down list) உருவாக்க HMTL குறியீட்டை எழுதவும்.

Write HTML code to create a drop down list.

15. (அ) டைனமிக் HTML இன் அம்சங்களைக் கொடுங்கள்.

Give the features of dynamic HTML.

Or

(ஆ) இன்லைன் (Inline) பாணியில் குறிப்பு எழுதவும்.

Write a note on inline style.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions by choosing (a) or (b).
Each answer should not exceed 600 words.

16. (அ) உங்கள் கல்லூரி மற்றும் உங்கள் கல்லூரியில் வழங்கப்படும் படிப்புகளின் படத்தைக் காட்ட HTML குறியீட்டை எழுதவும்.

Write HTML code to display the image of your college and the courses offered in your college.

Or

(ஆ) HTML குறியீட்டை எழுதவும்

$x^2 + y^2 = r^2$

$PCl_3 + Cl_2 = PCl_5$

Write HTML code to display the following

$x^2 + y^2 = r^2$

$PCl_3 + Cl_2 = PCl_5$

17. (அ) உங்கள் நிறுவனத்தின் முகப்புப் பக்கத்தை உருவாக்க HTML நிரலை எழுதவும்.

Write HTML program to create homepage of your Company.

Or

(ஆ) வரைப்பக்கத்தில் png வடிவப் படங்களை உட்பொதிப்பதை விளக்கவும்.

Explain the embedding of png format images in a webpage.

18. (அ) பின்வரும் பட்டியல் பறவைகள் காட்ட HTML குறியீட்டை எழுதவும்.

பறவைகள்

- குருவி
- புறா
- கோழி
- வாத்து

Write HTML code to display the following list.

Birds

- Sparrow
- Pigeon
- Hen
- Duck

Or

(ஆ) பின்வரும் அட்டவணையைக் காட்ட HTML குறியீட்டை எழுதவும்.

Car Price List

Brand	Model	Price
Maruti	Brezza	Rs. 8,34,000
	Ertiga	Rs. 8,69,000
Mahindra	XUV 700	Rs. 15,99,000
	Bolero	Rs. 9,99,000

Write HTML code to display the following table.

Car Price List

Brand	Model	Price
Maruti	Brezza	Rs. 8,34,000
	Ertiga	Rs. 8,69,000
Mahindra	XUV 700	Rs. 15,99,000
	Bolero	Rs. 9,99,000

19. (அ) இடது சட்டத்தில் யானையின் படத்தையும் வலது சட்டகத்தில் விளக்கத்தையும் காட்ட HTML குறியீட்டை எழுதவும்.

Write HTML code to display image of elephant in left frame and description in right frame.

Or

(ஆ) பயோடேட்டா படிவத்தைக் காட்ட HTML நிரலை எழுதவும்.

Write HTML program to display biodata form.

20. (அ) ஸ்டைல் ஷீட்டை விவரிக்க.

Describe a style sheet.

Or

(ஆ) ஸ்டைல் ஷீட்டை HTML ஆவணத்துடன் இணைப்பதற்கான பல்வேறு முறைகளை விளக்குக.

Explain the different methods to link a style sheet to HTML document.

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(6 pages) **Reg. No. :** .....

Code No. : 10518 E **Sub. Code : CNCS 41/ CNSE 41**

U.G. (CBCS) DEGREE EXAMINATION, APRIL 2024

Fourth Semester

Computer Science / Software Engineering

Non-Major Elective – HTML

(For those who joined in July 2021 – 2022)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. The first page of a website is called _____.

   (a) Logo (b) goodwill

   (c) homepage (d) hyperlink

2. Which of the following is not used to identify the location of a target?

   (a) type attribute of <a>

   (b) href attribute of <a>

   (c) id attribute of <a>

   (d) id attribute of heading tag

3. <b> tag displays text within it in _____.

(a) blue color (b) black color

(c) bold font (d) bigger size

4. Which is a fixed part of the webpage that will stay on the screen when the text of the page is scrolled?

(a) Home (b) Base

(c) Banner (d) Prologue

5. Which tag is used for displaying list items?

(a) (b)

(c) (d) <list>

6. Which tag is used to insert a row in a table?

(a) <table> (b) <td>

(c) <row> (d) <tr>

7. Which attribute specifies the URL of the HTML document to be displayed in the frame?

(a) Address (b) src

(c) name (d) file

8. Which of the following is not used as unit for the size of the frames?

(a) Pixel (b) Percentage

(c) Metre (d) Fraction

9. _____ points is equivalent to one inch.

(a) 24 (b) 36

(c) 48 (d) 72

10. A set of frames is defined using _____ tag.

(a) <frame> (b) <frameset>

(c) <form> (d) <fraction>

PART B — (5 × 5 = 25 marks)

Answer ALL questions by choosing (a) or (b).
Each answer should not exceed 250 words.

11. (a) Give the History of HTML.

Or

(b) Write a note on Anchor tag.

12. (a) Explain tab settings.

Or

(b) Write HTML code to display a colourful web page.

13. (a) List out the tags used to create a table.

Or

(b) List out the tags used to create an ordered list.

14. (a) Give Frameset definition.

Or

(b) Write HTML code to create a drop down list.

15. (a) Give the features of dynamic HTML.

Or

(b) Write a note on inline style.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions by choosing (a) or (b).
Each answer should not exceed 600 words.

16. (a) Write HTML code to display the image of your college and the courses offered in your college.

Or

(b) Write HTML code to display the following

$x^2 + y^2 = r^2$

$PCl_3 + Cl_2 = PCl_5$

17. (a) Write HTML program to create homepage of your Company.

Or

(b) Explain the embedding of png format images in a webpage.

18. (a) Write HTML code to display the following list.

Birds

- Sparrow
- Pigeon
- Hen
- Duck

Or

(b) Write HTML code to display the following table.

Car Price List

Brand	Model	Price
Maruti	Brezza	Rs. 8,34,000
	Ertiga	Rs. 8,69,000
Mahindra	XUV 700	Rs. 15,99,000
	Bolero	Rs. 9,99,000

19. (a) Write HTML code to display image of elephant in left frame and description in right frame.

Or

(b) Write HTML program to display biodata form.

20. (a) Describe a style sheet.

Or

(b) Explain the different methods to link a style sheet to HTML document.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10519 E **Sub. Code : CNCS 42/ CNSE 42**

U.G. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Fourth Semester

Computer Science

Non Major Elective – PROGRAMMING IN C

(For those who joined in July 2021–2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. ———————— is used to separate words.

(a) Punctuation marks

(b) White spaces

(c) Operators information or data

(d) None of these

2. The ———————— operator returns the number of bytes the operand occupies.

(a) sizeof (b) lengthof

(c) bytesof (d) widthof

3. The ———————— standard library function is used to print the values in a specified format.

(a) Printf (b) Print

(c) Output (d) Gets

4. Switch statement is a ————————decision statement

(a) Multiway

(b) Dual way

(c) One way

(d) None of these

5. In the loop, the control conditions are tested at the end of the body of the loop.

(a) Exit-controlled

(b) Entry-controlled

(c) Execution- controlled

(d) None of these

6. A group of related data item that share a common name is called

(a) Element (b) Array

(c) Index (d) String

7. The following function is used to join two strings together.

(a) strjoin() (b) strcat()

(c) strcmb() (d) None of these

8. The process of combining two strings is called _____.

(a) Combination (b) Append

(c) Concatenation (d) Join

9. A _____ is a self-contained block of code that performs a particular task.

(a) Function (b) Program

(c) Array (d) Loop

10. A function calling by itself is called _____.

(a) Controlled function

(b) Recursion

(c) Inline function

(d) Main function

PART B — (5 × 5 = 25 marks)

Answer ALL questions by choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) How will you assign values to variables to variables in C? Give examples.

Or

(b) Write down the use of the following operators.

(i) Conditional operator

(ii) Bit-wise operators

12. (a) Explain the use of precision and width field in formatting a string with example.

Or

(b) Explain the working of simple if statement with example.

13. (a) What is the difference between entry-controlled loop and exit–controlled loop?

Or

(b) How arrays are declared in C?

14. (a) How string variables are declared and initialized in C?

Or

(b) Write short notes on the following.

(i) strcat()

(ii) strcpy()

15. (a) Explain how a function is called inC.

Or

(b) Write short note on function with no arguments and no return values.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Define constant. Describe the various types of constant.

Or

(b) Discuss about assignment operators and logical operators in C with suitable examples.

17. (a) Write short note on formatted functions in C.

Or

(b) Explain the working of switch statement with example.

18. (a) Write about for loop statement in C.

Or

(b) How one–dimensional arrays are declared and used in C?

19. (a) Describe the functions that is used to read strings from the terminal with examples.

Or

(b) Explain the following.

(i) strlen()

(ii) strcpy()

(iii) strcmp()

(iv) strcat()

20. (a) Discuss about the functions with arguments but no return values.

Or

(b) Give a brief account on functions with arrays.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10520 E **Sub. Code : CECS 51**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024.

Fifth Semester

Computer Science

Major Elective — MOBILE APPLICATION DEVELOPMENT

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. Which of the following in the topmost layer of Android Architecture?

   (a) Applications frame work

   (b) Applications

   (c) System

   (d) Kernal

2. OHA in android stands for

(a) Open Handset Association

(b) Open Handset Alliance

(c) Open Handset Application

(d) Open Health Academy

3. Facility planning is also known as

(a) Facility layout (b) Facility design

(c) Plant layout (d) None

4. A program running on the server machine is called,

(a) Web server (b) Web process

(c) Web application (d) Web program

5. The method is called when the service was created first time using on start command ( ) or onBind ( ) is ————————

(a) on start( ) (b) on create( )

(c) on Restart( ) (d) on pause( )

6. Which of the following method is used to handle what happens after clicking the button?

(a) on Click (b) on Create

(c) on Select (d) None

7. ———————— is the parent class of service.

(a) Object (b) Stack

(c) Context wrapper (d) None

8. A piece of an activity which enable more modular activity design

(a) Intents (b) Fragments

(c) Activity (d) Filters

9. In the following which method becomes active in fragment?

(a) on pause (b) on Resume

(c) on start (d) on create

10. What are the parameters in fetching the cursor?

(a) Cursor-name (b) Variable-list

(c) Both (a) and (b) (d) None

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) What are the important items in every Android Project?

Or

(b) Describe how to add values to the spinner.

12. (a) How to use Android sharesheet?

Or

(b) How to create a second activity and layout?

13. (a) What do you mean by view and view group?

Or

(b) What are the four essential stages of an activity?

14. (a) Explain with example for Android Fragment.

Or

(b) How to add custom targets?

15. (a) What are the functions available in SQL database package?

Or

(b) How to replace text in list view?

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain how to create and manage virtual devices?

Or

(b) Discuss about update the text view properties.

17. (a) Explain the examples of activities in Android studio.

Or

(b) List out the advantages and disadvantages of web applications.

18. (a) Discuss about fragment life cycle.

Or

(b) Explain how to create a project and activities.

19. (a) Write a note on :

(i) Radio button

(ii) Allign views

(iii) Toggle button.

Or

(b) Explain to update the version number.

20. (a) Briefly explain simple cursor adaptor.

Or

(b) (i) List out the advantage of SQLite.

(ii) What are the storage classes of SQLite?

———————

Reg. No. : .....

Code No. : 10521 E **Sub. Code : CECS 52**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024.

Fifth Semester

Computer Science

Major Elective — INTRODUCTION TO SECURITY IN COMPUTING

(For those who joined in July 2021–2022 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. _____ is the protection of transmitted data from passive attacks

   (a) confidentiality (b) integrity

   (c) non-repudiation (d) denial of service

2. The most widely used stream cipher is _____

   (a) RC4 (b) RSA

   (c) SHA (d) Diffie Hellman

3. _____ depends on a cryptographic algorithm based on two related keys.

(a) RC4 (b) RSA

(c) SHA (d) DES

4. The most widely used public-key cryptosystem is _____

(a) RC4 (b) RSA

(c) SHA (d) DES

5. _____is based on the hash function MD4.

(a) RC4 (b) RSA

(c) SHA (d) Diffie Hellman

6. In _____the exchange is authenticated by signing a mutually obtainable hash.

(a) E-mail (b) M-Commerce

(c) E-commerce (d) digital signature

7. _____is the set of hardware, software, people, policies, and procedures needed to create and revoke digital certificates based on asymmetric cryptography

(a) private key (b) PKI

(c) digital signature (d) public key

8. Eavesdropping on the Net is a threat to _____

(a) confidentiality (b) integrity

(c) non-repudiation (d) denial of service

9. A _____defines a single choke point that keeps unauthorized users out of the protected network.

(a) DSS (b) Kerberos

(c) Firewall (d) HMAC

10. The ability of a system to defend against intruders and malicious programs is to implement _____ technology.

(a) DSS (b) trusted system

(c) authentication (d) key exchange

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write a note on security services.

Or

(b) Give the evaluation criteria for AES.

12. (a) Write Euclid's algorithm,

Or

(b) Write a note on key distribution.

13. (a) Write a note on authentication function.

Or

(b) Write a note on Hash functions.

14. (a) Write a note on the applications of authentication.

Or

(b) Write a note on E-mail security.

15. (a) Explain countermeasures for virus.

Or

(b) Explain trusted systems.

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain DES.

Or

(b) Give the block cipher design principles.

17. (a) Explain Diffie Hellman key exchange.

Or

(b) Explain ellipse curve cryptography, ECC.

18. (a) Explain SHA.

Or

(b) Explain digital signature.

19. (a) Explain Kerberos.

Or

(b) Explain IP security.

20. (a) Explain intrusion detection system.

Or

(b) Explain firewall design principles.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10522 E **Sub. Code : CECS 53**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024.

Fifth Semester

Computer Science – Major Elective

CLOUD COMPUTING

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Applications and services that run on a distributed network using virtualized resources is known as ———— computing

   (a) Parallel

   (b) Soft

   (c) Distributed

   (d) Cloud

2. Which of the following architectural standards is working with cloud computing industry?

   (a) Web-application frameworks

   (b) Service-oriented architecture

   (c) Standardized Web services

   (d) Web-application architecture

3. What is the formula to calculate the cost of a cloud computing deployment?

   (a) CostCLOUD =Σ(UnitCostCLOUD/ (Revenue + CostCLOUD))

   (b) CostCLOUD =Σ(UnitCostCLOUD/ (Revenue - CostCLOUD))

   (c) CostCLOUD=Σ(UnitCostCLOU×(Revenue – CostCLOUD))

   (d) CostCLOUD=Σ(UnitCostCLOUD×(Revenue + CostCLOUD))

4. Cloud computing is a concept that involves pooling physical resources and offering them as which sort of resource?

   (a) cloud (b) real

   (c) virtual (d) service

5. Which of the following is the most essential element in cloud computing by CSA?

(a) Virtualization

(b) Multi-tenancy

(c) Identity management

(d) Access management

6. Which of the following is the most important area of concern in cloud computing?

(a) Scalability (b) Storage

(c) Security (d) Service

7. Which is the most essential concept related to Cloud computing?

(a) Abstraction (b) Reliability

(c) Productivity (d) Efficiency

8. Which of the following is the Cloud Platform provided by Amazon?

(a) AWS (b) Cloudera

(c) Azure (d) Alexa

9. A cloud service that provides automation services, virtual machines, load balancers, and firewalls is _____

(a) IaaS (b) PaaS

(c) SaaS (d) CaaS

10. Cloud computing is essentially performed with OpenStack as ————————

(a) IaaS (b) PaaS

(c) SaaS (d) CaaS

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 250 words.

11. (a) Compare traditional and cloud computing paradigms.

Or

(b) Write a note on cloud deployment models.

12. (a) Give cloud computing life cycle

Or

(b) Write a note on VMWare.

13. (a) Write a note on SOA components.

Or

(b) Write a note on data privacy risks in the cloud.

14. (a) What are the requirements for disaster recovery?

Or

(b) What are the types of migration for cloud enabled applications?

15. (a) Give the benefits of Open Stack.

Or

(b) Write a note on the major components of Hadoop.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 600 words.

16. (a) Explain cloud computing characteristics.

Or

(b) Explain cloud storage devices.

17. (a) Explain the types of virtualization.

Or

(b) Explain mobile cloud computing architecture.

18. (a) Explain SOA Infrastructure.

Or

(b) Explain cloud risk management framework.

19. (a) Explain the types of SLAS.

Or

(b) Explain Google Drive.

20. (a) Explain the features of Nimbus.

Or

(b) Discuss the applications of cloud computing.

———————

(7 pages) **Reg. No. :** .....

Code No. : 10523 E **Sub. Code : CECS 61**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024

Sixth Semester

Computer Science

Major Elective — INTERNET OF THINGS

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which of the following characteristics is NOT associated with IoT?

   (a) Scalability

   (b) Real-time processing

   (c) Analog communication

   (d) Interconnectivity

2. Which wireless communication protocol is commonly used in IoT devices for short-range communication?

(a) Bluetooth (b) Wi-Fi

(c) 3G (d) LTE

3. Which programming language is commonly used for IoT development due to its simplicity and versatility?

(a) Java (b) Python

(c) C++ (d) Ruby

4. What is the primary function of virtualization in IoT?

(a) To enhance security

(b) To improve performance

(c) To enable resource sharing

(d) To simplify programming

5. Which of the following is NOT an application area of IoT?

(a) Finance (b) Healthcare

(c) Agriculture (d) Entertainment

6. What is the primary difference between cloud computing and IoT?

(a) Scale of deployment

(b) Processing speed

(c) Security measures

(d) Cost of infrastructure

7. What is the primary goal of implementing IoT technology in smart cities?

(a) Cost reduction

(b) Environmental conservation

(c) Efficient resource management

(d) Social media integration

8. Which sector is NOT typically targeted for IoT applications in smart cities?

(a) Education (b) Transportation

(c) Tourism (d) Industry

9. Which of the following is NOT a network technology commonly used, for IoT and M2M communications?

(a) Wi-Fi (b) Bluetooth

(c) Ethernet (d) Token Ring

10. What is the primary objective of security measures in IoT and M2M communications?

(a) Protecting data confidentiality

(b) Ensuring network availability

(c) Preventing unauthorized access

(d) Optimizing network performance

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain the concept of fog-based architecture in IoT with its advantages.

Or

(b) Describe the IoT network protocol stack and role of each layer in enabling communication between IoT devices.

12. (a) Compare and contrast assembly programming with higher-level languages like Python in the context of IoT development.

Or

(b) Explain the concept of embedded virtualization and its significance in IoT systems.

13. (a) Discuss the role of IoT in healthcare applications give examples of IoT-enabled healthcare devices.

Or

(b) Write the various dimensions and components of a smart city, along with examples of IoT applications indifferent sectors.

14. (a) Explain how IoT can enhance learning experiences, improve school operations and facilitate remote education.

Or

(b) Discuss how IoT solutions can improve public services, enhance citizen engagement and optimize resource allocation in government organizations.

15. (a) Discuss the security challenges associated with IoT and M2M technologies.

Or

(b) Compare and contrast the security features of IETF and ETSI M2M network technologies.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Compare and contrast Bluetooth, Zigbee, and 6LowPan protocols in the context of IoT applications.

Or

(b) Discuss the logical design of IoT, including its architecture and components.

17. (a) Compare the programming paradigms of assembly and Python in the context of IoT development.

Or

(b) Describe the programming framework for IoT using Arduino, including its architecture and key features.

18. (a) Analyze the impact of IoT on agriculture. Provide examples of IoT-enabled agriculture technologies and their benefits.

Or

(b) Explore the potential applications of IoT in the construction industry. Discuss how IoT can improve efficiency, safety and sustainability in construction projects.

19. (a) Explain the design strategies for implementing IoT in smart cities.

Or

(b) Briefly explore the role of IoT in smart transportation systems and benefits of IoT- enabled transportation solutions.

20. (a) Evaluate the effectiveness of current security measures in IoT and M2M communications.

Or

(b) Propose a comprehensive security framework for IoT and M2M communications.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10524 E **Sub. Code : CECS 62**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024

Sixth Semester

Computer Science

Major Elective — INTRODUCTION TO DIGITAL IMAGE PROCESSING

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. What is pixel?

   (a) Pixel is the elements of a digital image

   (b) Pixel is the elements of an analog image

   (c) Pixel is the cluster of a digital image

   (d) Pixel is the cluster of an analog image

2. The amount of luminous flux falling on a given area of surface is called as ————————.

(a) Aperture (b) Contrast

(c) Brightness (d) Luminance

3. Digitization of spatial co-ordinates (x, y) is called ————————.

(a) Gray level quantization

(b) Finite sampling

(c) Image sampling

(d) Image quantization

4. The range of values spanned by the gray scale is called ————————.

(a) Dynamic range

(b) Band range

(c) Peak range

(d) Resolution range

5. Which of the following is the primary objective of sharpening of an image?

(a) Blurring the image

(b) Highlight fine details in the image

(c) Increase the brightness of the image

(d) Decrease the brightness of the image

6. Which is a colour attribute that describes a pure colour?

(a) Saturation (b) Hue

(c) Brightness (d) Intensity

7. The number of grey values are integer powers of ————————.

(a) 4 (b) 2

(c) 8 (d) 1

8. If inner region of object is textured then approach we use is ————————.

(a) Discontinuity (b) Similarity

(c) Extraction (d) Recognition

9. Approach to image restoration is ————————.

(a) Inverse filtering (b) Spike filtering

(c) Black filtering (d) Ranking

10. Enhancement of differences between images is based on the principle of ————————.

(a) Additivity

(b) Homogeneity

(c) Subtraction

(d) Multiplication

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) How to represent the digital images? Explain.

Or

(b) Show the definition of image and digital image processing.

12. (a) Describe the basics of spatial filtering.

Or

(b) Write down the basic gray level transformation.

13. (a) Explain the purpose of color segmentation.

Or

(b) Distinguish between the color image smoothing and sharpening.

14. (a) Point out the mathematical analysis in image compression.

Or

(b) Determine the various types of compression strategies.

15. (a) Highlight the salient features of an image.

Or

(b) Summarize the methods of region based segmentation.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss the fundamental steps in digital image processing.

Or

(b) Conclude the implementation of visual perception with diagram.

17. (a) Examine the histogram processing and function plotting.

Or

(b) What are the basics of filtering in the frequency domain? Explain.

18. (a) Illustrate the two dimensional Fourier transform and its inverse.

Or

(b) Outline the categories of color image processing.

19. (a) Draw and explain the concept of image compression model.

Or

(b) Evaluate the logic operations involving binary images.

20. (a) Formulate the steps by steps process of feature extraction.

Or

(b) Analyze the attributes of features in image segmentation.

———————

Reg. No. : .....

(6 pages)

Code No. : 10525 E **Sub. Code : CECS 63**

B.Sc. (CBCS). DEGREE EXAMINATION, APRIL 2024.

Sixth Semester

Computer Science

Major Elective – NEURAL NETWORKS

(For those who joined in July 2021 – 2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which of the following is true?
   (i) On average, neural networks have higher computational rates than conventional computers
   (ii) Neural networks learn by example
   (iii) Neural networks mimic the way the human brain works
   (a) All of the mentioned are true
   (b) (ii) and (iii) are true
   (c) (i), (ii) and (iii) are true
   (d) None of the mentioned

2. Neural Networks are complex _____ with many parameters.

   (a) Linear Functions

   (b) Non Linear Functions

   (c) Discrete Functions

   (d) Exponential Functions

3. What is perceptron?

   (a) A single layer feed-forward neural network with pre-processing

   (b) An auto-associative neural network

   (c) A double layer auto-associative neural network

   (d) A neural network that contains feedback

4. In perceptron learning, what happens when input vector is correctly classified?

   (a) Small adjustments in weight is done

   (b) Large adjustments in weight is done

   (c) No adjustments in weight is done

   (d) Weight adjustments doesn't depend on classification of input vector

5. Feed forward networks are used for?
   (a) Pattern mapping
   (b) Pattern association
   (c) Pattern classification
   (d) All of the above mentioned
6. Information passed till it reaches the output in _____type of ANN?
   (a) Recurrent Neural Networks
   (b) Feed-forward Neural Networks
   (c) Convolutional Neural Networks
   (d) Deconvolutional Neural Networks
7. Input applied in ANN passed on to layers hidden to produce outcome is referred to as _____.
   (a) Signal Propagation
   (b) Backward Propagation
   (c) Channel Propagation
   (d) Forward Propagation
8. Which parameter should be set while using Backpropagation?
   (a) Number of Inputs
   (b) Number of Outputs
   (c) Number of Gradients
   (d) Number of Intermediate Stages

9. Image pre-processing is carried-out by _____.

(a) ANN (b) LAN

(c) MAN (d) WAN

10. Which application out of these of robots can be made of single layer feedforward network?

(a) Wall climbing

(b) Rotating arm and legs

(c) Gesture control

(d) Wall following

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Give the comparison between the Artificial and Biological Neural Networks.

Or

(b) Discuss about Basic Building Blocks of Artificial Neural Networks.

12. (a) Explain Pits Neuron Model with neat diagram.

Or

(b) Discuss the Perceptron training rule in detail.

13. (a) Write a short note on Multi-layer feed forward networks.

Or

(b) Describe the design issues of Back Propagation Network.

14. (a) Write a short note on Kohonen's self-organizing map.

Or

(b) Explain the architecture of forward only CPN.

15. (a) Explain in detail about applications of Artificial Neural Networks.

Or

(b) Describe about the Bankruptey Forecasting.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Explain how the neural networks plays an important role in Historical Development.

Or

(b) Explain the basic neuron models with necessary graphical representation.

17. (a) How single layer perceptron is different from multi-layer perceptron? Explain the concept of multi-layer neuron model.

Or

(b) Explain the fundamental models of Artificial Neural Networks. Discuss about their Learning rules.

18. (a) Why does ANN use Back Propagation? Explain in detail.

Or

(b) What are the relation between BAM and Hopfield Nets?

19. (a) Explain about Kohonen self organizing features maps.

Or

(b) Briefly describe about the Counter Propagation Network and its types.

20. (a) Discuss Intrusion detection system for Healthcare based on Neural Networks.

Or

(b) How neural networks are applied in bioinformatics?

———————

(6 pages) **Reg. No. :** .....

Code No. : 10556 E **Sub. Code : CMIT 11/ CMCT 11**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

First Semester

Information Technology / Computer Science and I.T. – Core

INTRODUCTION TO INFORMATION TECHNOLOGY AND HTML

(For those who joined in July 2021–2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. Which type of memory is located within the CPU and is the fastest to access?

(a) RAM (b) Cache Memory

(c) ROM (d) Hard Disk Drive

2. Which input device is primarily used for pointing and selecting objects on the screen?

   (a) Mouse

   (b) Keyboard

   (c) Scanner

   (d) Microphone

3. What is the primary language used to create web pages?

   (a) Java (b) C++

   (c) Python (d) HTML

4. ISP stands for ————————.

   (a) Internet Security Protocol

   (b) Internet Service Provider

   (c) International Software Provider

   (d) Information Storage Provider

5. Which of the following is not a basic component of HTML?

   (a) Tags

   (b) Attributes

   (c) Elements

   (d) Variables

6. Numbered list or the ordered list can be created by giving the ———————— tags.

(a) <UL> </UL>

(b) <OL> </OL>

(c) <LI> <LI>

(d) <I> </I>

7. Which image format supports animation?

(a) GIF (b) JPEG

(c) PNG (d) BMP

8. Which of the following tag is used to add rows in the table?

(a) <td> and </td>

(b) <th> and </th>

(c) <tr> and </tr>

(d) <th> and </td>

9. CSS stands for _____

(a) Computer Style Sheets

(b) Cascading Style Sheets

(c) Creative Style Sheets

(d) Combined Style Sheets

10. Which CSS property is used to set the color of text?

(a) Text-color (b) Font-color

(c) Text-style (d) Color

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) What is meant by Information Technology? Explain its advantages and disadvantages.

Or

(b) Describe the function of Input Devices in a computer system. Provide example.

12. (a) Write a note on how the web works.

Or

(b) Elaborate on Domain naming system.

13. (a) Demonstrate on basic structure of HTML.

Or

(b) Describe the syntax of <a> tag and its attributes for creating hyperlinks in HTML.

14. (a) Illustrate the concept of hyperlink anchors and creating clickable image links on web pages.

Or

(b) Discuss <Marquee> tag and its attributes.

15. (a) Write down the syntax of CSS rule including selectors, properties and values.

Or

(b) Explain the @keyframes rule in CSS and its role in defining animations.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss the concept of Memory Hierarchy in computer architecture.

Or

(b) Categorize the different types of output devices.

17. (a) Illustrate the architecture of typical web server and its components.

Or

(b) Give a brief note on Integrated Services Digital Network (ISDN).

18. (a) Explain the different types of lists available in HTML with example program.

Or

(b) Explore the various formatting options available in HTML for styling text.

19. (a) Explore the different types of form input elements with suitable program.

Or

(b) Discuss <input> tag and its various types with example program.

20. (a) Explain the importance of typography in web design and role of CSS in controlling text appearance.

Or

(b) Explicate the concept of transitions and transforms and animation in CSS.

———————

(6 Pages)

Reg. No. : .....

Code No. : 10557 E **Sub. Code : CMIT 21/ CMCT 21**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Second Semester

Information Technology/Computer Science and I.T – Core

C PROGRAMMING

(For those who joined in July 2021-2022 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL the questions.

Choose the correct answer :

1. What is the size of char datatype?

   (a) 8 byte (b) 4 byte

   (c) 2 byte (d) 1 byte

2. _____ are user defined words used to name entities like variables, arrays, functions, structures etc.,

   (a) Character set (b) Identifiers

   (c) Constants (d) Storage class

3. While.., loop is an _____ type loop

(a) Entry-controlled (b) Exit-controlled

(c) Both (d) None of the above

4. What is the purpose of the 'continue' statement in C?

(a) Skip the loop

(b) Exit the program

(c) Skip the current iteration

(d) Exit the loop

5. If S is an array of 80 characters, then the value assigned to S through the statement scanf $("\%oS", S)$ with input 12345 would be.

(a) "12345"

(b) Nothing since 12345 is an integer

(c) S is an illegal name for string

(d) %s cannot be used for reading in values of S

6. Array of character is a _____.

(a) enum (b) union

(c) string (d) file

7. In C, what is the purpose of the 'return' statement in a function?

   (a) To declare the function's return type

   (b) To exit the program

   (c) To return a value from the function

   (d) To define a function

8. Function declaration is also known as function _____.

   (a) Definition (b) Prototype

   (c) Call (d) Return

9. In C, how do you declare a pointer variable that can store the address of an integer?

   (a) int *ptr; (b) ptr int;

   (c) int ptr; (d) ptr *int;

10. In C, what is a pointer primarily used for.

    (a) Decision making

    (b) Code organization

    (c) Variable declaration

    (d) Storing values

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Explain C character set.

Or

(b) Describe any four functions for managing input output operations in C.

12. (a) Briefly explain if...else statement in C.

Or

(b) Write the use of switch statement with its syntax and example.

13. (a) Designate multidimensional arrays with example.

Or

(b) Elucidate how to compare two strings. Give example.

14. (a) Define a function with no arguments and no return values.

Or

(b) Outline how to access structure members with syntax and example.

15. (a) Write a C program to illustrate pointers.

Or

(b) Discuss error handling of files.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Illuminate evaluation of expressions in C with examples.

Or

(b) Express the declaration of storage classes.

17. (a) Discuss nesting of if... else statement with example.

Or

(b) Develop a C program to illustrate while.., loop.

18. (a) How do you declare and initialize one dimensional arrays. Give examples?

Or

(b) Explain any five string handling functions.

19. (a) Exemplify recursion with example program.

Or

(b) Describe user-defined functions with examples.

20. (a) Exemplify accessing a variable through its pointer with an example.

Or

(b) Elucidate er I/O operations on file.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10558 E **Sub. Code : CMIT 31/ CMCT 31**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Third Semester

Information Technology/
Computer Science and IT – Core

OBJECT ORIENTED PROGRAMMING WITH C++

(For those who joined in July 2021 – 2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. ———————— refers to the act of representing essential features without including the background details.

   (a) Encapsulation

   (b) Data Abstraction

   (c) Inheritance

   (d) Polymorphism

2. Identify the method is used to set various flags for formatting output.

(a) width( ) (b) precision( )

(c) unsetf( ) (d) setf( )

3. ———————— statement terminates the execution of the loop.

(a) exit( ) (b) continue

(c) break (d) terminate( )

4. Name the command used to transfer the control of execution to any place in a program.

(a) goto (b) if

(c) for (d) switch

5. The class can be accessed only through ————————.

(a) variables (b) functions

(c) objects (d) structure

6. ———————— is a keyword used to preserve the value of the variable.

(a) private (b) public

(c) protected (d) static

7. The outcome of inheritance is ————————.

(a) increasing space

(b) increasing time

(c) reusability

(d) overloading

8. ———————— is a memory variable that stores a memory address.

(a) integer (b) pointer

(c) class (d) object

9. The function get( ), getline( ), read( ) and>> or defined in the ———————— class.

(a) math

(b) ostream

(c) fstream

(d) istream

10. When a file is opened in ———————— mode the get pointer is set at the beginning of the file.

(a) binary (b) write

(c) read (d) seek

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions by choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Describe the advantages of Object Oriented Programming.

Or

(b) Elaborate on Formatted console I/O Operations.

12. (a) Demonstrate Jump statement with example program.

Or

(b) Illustrate the principles of function overloading.

13. (a) How do you achieve data hiding in C++. Give an example.

Or

(b) Elucidate on friend function and illustrate with an example.

14. (a) How to define pointer to objects in C++? Give its usage in program.

Or

(b) What are the constraints in increment and decrement operators?

15. (a) Characterize the file opening modes in C++.

Or

(b) Comment on Abstract classes.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions by choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Deliberate the key concepts of object oriented programming.

Or

(b) Represent the usage of input and output in C++.

17. (a) Discuss the looping commands with an example.

Or

(b) Comment on functions in C++.

18. (a) Demonstrate the constructors and destructors with example program.

Or

(b) Intricate on copy constructor with suitable example.

19. (a) Represent the type conversion operation with an example program.

Or

(b) Elucidate the purpose of virtual base classes in C++.

20. (a) Originate the mechanism of virtual functions.

Or

(b) Describe the manipulators with arguments in C++.

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(6 pages) **Reg. No. :** .....

Code No. : 10559 E **Sub. Code : CMIT 41/ CMCT 41**

B.Sc.(CBCS) DEGREE EXAMINATION, APRIL 2024.

Fourth Semester

Information Technology/Computer Science and Information Technology – Core

JAVA PROGRAMMING

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Who invented Java Programming?

   (a) Guido van Rossurn

   (b) James Gosling

   (c) Dennis Ritchie

   (d) Bjarne Stroustrup

2. Which one of the following is not a Java feature?

   (a) Object-oriented

   (b) Use of pointers

   (c) Portable

   (d) Dynamic and Extensible

3. Which of the following is not an OOPS concept in Java?

   (a) Polymorphism

   (b) Inheritance

   (c) Compilation

   (d) Encapsulation

4. What is the extension of compiled Java classes?

   (a) .txt (b) .js

   (c) class (d) java

5. Which of these keywords can be used to prevent Method overriding?

   (a) Static (b) Constant

   (c) Protected (d) Final

6. What is the process of defining a method in a subclass having same name & type signature as a method in its superclass?

   (a) Method overloading

   (b) Method Overriding

   (c) Method hiding

   (d) Constructor

7. Which of these keywords must be used to monitor for exceptions?

   (a) Try (b) Finally

   (c) Throw (d) Catch

8. Which of these packages contains the exception Stack Overflow in Java?

   (a) Java.io (b) Java.system

   (c) Java.lang (d) Java.util

9. Which of these events is generated when the window is closed?

   (a) TextEvent (b) MouseEvent

   (c) FocusEvent (d) WindowEvent

10. Which is a component in AWT that can contain another components like buttons, text fields, labels?

(a) Window (b) Container

(c) Panel (d) Frame

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Illustrate the data types supported byjava.

Or

(b) List out the different features of java.

12. (a) Discuss about constructor overloading with example.

Or

(b) Write a factorial value program using recursion

13. (a) Identify the steps involved in creating packages.

Or

(b) Differentiate between classes and interfaces.

14. (a) Explain synchronization with example.

Or

(b) How exception can be handled in java? Explain.

15. (a) Interpret the delegation event model in Java.

Or

(b) Elaborate note on event listener interfaces.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Categorize the different types of operators

Or

(b) Explain if else and switch statements with example.

17. (a) Describe the importance of this keyword in java with an example program.

Or

(b) Interpret the concept of class and object with example.

18. (a) Classify the various inheritance with suitable example.

Or

(b) Write a java program to create a package which has a classes and methods to read student admission detail.

19. (a) Develop a java program to implement built in exceptions.

Or

(b) Compare and contrast difference between applets and applications.

20. (a) Describe the types of layout manager in Java.

Or

(b) Write a Java program to design login window using AWT controls.

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(8 pages) **Reg. No. :** .....

Code No. : 10560 E **Sub. Code : CMIT 51/ CMCT 51**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Fifth Semester

Information Technology/Computer Science and Information Technology – Core

SOFTWARE ENGINEERING AND TESTING

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. What is the primary goal of software engineering?
   (a) Developing software quickly
   (b) Building high-quality software cost-effectively
   (c) Producing complex software without documentation
   (d) Minimizing user involvement

2. Which software development myth involves the belief that adding more people to a late software project will speed up its completion?

   (a) The Myth of the Silver Bullet

   (b) The Myth of the Magical Manager

   (c) The Myth of More

   (d) The Myth of Infinite Resources

3. Which of the following is a technique used to elicit requirements by observing and analyzing how users perform their tasks and interact with a system?

   (a) Brainstorming (b) Interviews

   (c) User observation (d) Surveys

4. What is a use case in requirements engineering?

   (a) A list of software requirements

   (b) A textual description of the user interface

   (c) A comprehensive model of system functionality from the users perspective

   (d) A detailed design of the database schema

5. What is the primary goal of software design in the software development process?

   (a) Writing code efficiently

   (b) Producing comprehensive documentation

   (c) Translating requirements into a solution

   (d) System testing and validation

6. In software design, what is a design model?

   (a) A graphical representation of code structure

   (b) A set of test cases

   (c) A user manual

   (d) A detailed project schedule

7. Why are software testing guidelines important?

   (a) To make software developers responsible for testing

   (b) To increase project cost

   (c) To ensure that testing is conducted systematically and effectively

   (d) To eliminate the need for documentation

8. When selecting software testing tools, what factor should be a top priority?

   (a) Tool popularity

   (b) Cost

   (c) Alignment with testing needs and objectives

   (d) The availability of training materials

9. In the seven-step testing process, which step typically involves test planning, including defining objectives, test cases, and schedules?

   (a) Test execution

   (b) Test closure

   (c) Test design and implementation

   (d) Test planning and control

10. In the context of rapid application development (RAD) testing, what is a key advantage?

   (a) Extensive documentation is not required

   (b) Testing is not necessary in RAD projects

   (c) Test cases can be prepared in the coding phase

   (d) RAD projects do not require testing since they are developed quickly

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain the importance of software engineering in the context of software development and how it differs from traditional programming.

Or

(b) Describe the iterative and incremental development approach in software process models and provide an example of a process model that follows this approach.

12. (a) Explain the significance of requirements elicitation in the software development process. Provide examples of techniques or methods used to elicit requirements effectively.

Or

(b) Describe the key components of a use case in software development. How do use cases help in modeling system functionality?

13. (a) Explain the importance of design concepts in the software development process.

Or

(b) Define architectural design in the context of software development.

14. (a) How do these software testing process phases contribute to the overall quality of the software product?

Or

(b) Discuss the importance of adherence to software testing guidelines and best practices.

15. (a) Differentiate between verification and validation testing in software testing.

Or

(b) Discuss the importance of testing software in a multiplat form environment.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Compare and contrast the principles and practices of Agile development with those of Extreme Programming (XP). Highlight how XPs practices, such as Test-Driven Development (TDD) and Pair Programming, contribute to the overall success of Agile projects.

Or

(b) Compare and contrast the Waterfall model and the Agile model as software development process models. Discuss their key characteristics, phases, and advantages and disadvantages. Provide examples of situations where each model is best suited.

17. (a) Explain how UML (Unified Modeling Language) methods are supplemented by use cases in software development. Provide examples of how use cases are integrated into UML diagrams and how they enhance the modeling of software systems.

Or

(b) Discuss the role of requirement negotiation in managing conflicts and trade-offs among stakeholders in software development projects.

18. (a) Describe the phases of the software design process.

Or

(b) Elaborate on the benefits and challenges of component-based development in software engineering.

19. (a) Explain the significance of training testers in the usage of testing tools.

Or

(b) Discuss the evolution of software testing from manual to automated testing approaches.

20. (a) Discuss the challenges that testing aims to address and how a well-structured testing process can mitigate these challenges.

Or

(b) Highlight the potential challenges that can be encountered during the testing processes.

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(7 Pages)

Reg. No. : .....

Code No. : 10561 E **Sub. Code : CMIT 52/ CMCT 52**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Fifth Semester

Information Technology/Computer Science and I.T. – Core

RELATIONAL DATABASE MANAGEMENT SYSTEM

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL the questions.

Choose the correct answer :

1. Which data model is best suited for representing hierarchical data structures?

   (a) Relational data model

   (b) Hierarchical data model

   (c) Network data model

   (d) NoSQL data model

2. What is the primary goal of transaction management in a database system?

   (a) To ensure high availability

   (b) To ensure data consistency and integrity

   (c) To improve query performance

   (d) To manage database storage

3. In relational algebra, what operation is used to combine two relations to produce a new relation containing all rows from both relations?

   (a) Selection (b) Projection

   (c) Union (d) Join

4. In tuple relational calculus, what does the expression $\{ t \mid R(t) \}$ represent?

   (a) All tuples in relation R

   (b) The union of two relations

   (c) The projection of relation R

   (d) The intersection of two relations

5. What does the SQL UPDATE statement do?

   (a) Add new rows to a table

   (b) Modify existing rows in a table

   (c) Remove rows from a table

   (d) Create a new table

6. What is the purpose of SQL OUTER JOINs?

   (a) To combine only matching rows from multiple tables

   (b) To combine all rows from multiple tables, including unmatched rows

   (c) To create a new table

   (d) To delete rows from a table

7. What is the purpose of a reference object view in a database?

   (a) To create a new user

   (b) To reference data from another table or view

   (c) To revoke privileges from a user

   (d) To store large binary data

8. In the context of database security, what is the role of a database user?

   (a) To store and organize data

   (b) To grant privileges to other users

   (c) To access and interact with the database

   (d) To manage database backups

9. What is a declaration in PL/SQL?

(a) A statement to declare variables, constants, and cursors.

(b) A SQL query.

(c) A conditional statement.

(d) A loop statement.

10. Which PL/SQL section contains the main executable code?

(a) Declaration section

(b) Exception handling section

(c) Execution section

(d) Trigger section

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Describe the role of the buffer manager in a database system and how it improves data access efficiency.

Or

(b) Explain the role of a Database Administrator (DBA) in a database management system. What are the key responsibilities of a DBA?

12. (a) Explain the basic principles of Tuple Relational Calculus. How is it different from Domain Relational Calculus?

Or

(b) Describe the Third Normal Form (3NF) and its significance in relational database design.

13. (a) What are single value tests in SQL, and how are they used in SQL queries to filter data?

Or

(b) How can you create a table in SQL using another existing table as a template? Explain the SQL statement and its purpose.

14. (a) What is the role of an abstract data type (ADT) in database design, and how does it differ from native data types?

Or

(b) What are Large Objects (LOBs) in a database, and what types of data are typically stored as LOBs?

15. (a) What is the purpose of the declaration section in PL/SQL, and what types of elements can be declared in this section?

Or

(b) What is the significance of the %TYPE attribute in PL/SQL variable declarations, and how is it used?

PART C — ($5 \times 8 = 40$ marks)

Answer ALL the questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Define and explain the importance of referential integrity in a relational database system. Describe how referential integrity constraints are used to maintain data consistency and quality, providing examples to illustrate their impact.

Or

(b) Describe the architectural components and layers of a typical database system in detail.

17. (a) Explain the concept of integrity constraints in a relational database system.

Or

(b) Describe the concepts of Tuple Relational Calculus and its usage in database querying.

18. (a) Explain the concepts of SQL transactions, and how do the COMMIT and ROLLBACK statements relate to ensuring data integrity in a database?

Or

(b) How do you create a unique index on a column in a SQL table? What is the significance of a unique index in database management?

19. (a) Describe the steps involved in creating a new user in a relational database Additionally, explain how you can grant specific privileges to the newly created user.

Or

(b) How can you revoke specific privileges from a user in a database, and what is the purpose of revoking privileges? Furthermore, explain the concept of a synonym in a database.

20. (a) What are database-level triggers and how do they differ from table-level triggers in PL/SQL? Explain the process of enabling, disabling, replacing, and dropping triggers.

Or

(b) Explain the concept of a PL/SQL package, and how does it enhance code organization and reusability?

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(7 pages)

Reg. No. : .....

Code No.: 10562 E **Sub. Code: CMIT 53 / CMCT 53**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024

Fifth Semester

Information Technology / Computer Science and Information Technology – Core

.NET PROGRAMMING

(For those who joined in July 2021–2022 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. What is an instance of a class in the context of object-oriented programming in .NET?

   (a) A static method

   (b) A collection of data

   (c) A reference to a type

   (d) A specific object created from a class

2. In .NET, what is a namespace used for?

   (a) Creating object-oriented classes -

   (b) Managing the memory of objects

   (c) Organizing and grouping related classes and types

   (d) Defining object properties

3. What is the purpose of the <input> element with type ="text" in HTML?

   (a) To display an image

   (b) To create a text box for user input

   (c) To define a list item

   (d) To play audio content

4. In web development, what is a server control?

   (a) A control that resides on the client-side

   (b) A control that performs server-side processing

   (c) A type of web browser

   (d) A form of user authentication

5. In ASP.NET, what is a session state used for?

   (a) Storing data on the client-side

   (b) Storing data temporarily on the server-side for a user session

   (c) Storing data in a query string

   (d) Handling errors and exceptions

6. Which type of data is suitable for storing in a session variable?

   (a) Highly sensitive and confidential data

   (b) Data that doesn't need to persist between sessions

   (c) Data that is better stored in a cookie

   (d) User preferences

7. In ADO.NET, what is the role of the Command object?

   (a) Storing database records

   (b) Establishing database connections

   (c) Executing SQL commands against a database

   (d) Creating user interfaces

8. Which of the following programming languages is commonly used to develop ADO.NET applications?

   (a) Python (b) Java

   (c) C# (d) Ruby

9. What is the primary purpose of an XML Schema (XSD)?

   (a) To transform XML data into HTML

   (b) To validate the structure and data types of XML documents

   (c) To create XML documents from scratch

   (d) To display XML data in web browsers

10. Which technology is commonly used in conjunction with XSLT to style and format XML documents for display in web browsers?

(a) JavaScript

(b) CSS (Cascading Style Sheets)

(c) HTML (Hypertext Markup Language)

(d) SQL (Structured Query Language)

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Explain the relationship between ASP.NET and Internet Information Services (IIS). How does IIS enable the hosting of ASP.NET applications?

Or

(b) Describe the role of namespaces in .NET programming. Provide an example of how namespaces are used to organize code.

12. (a) Explain the purpose of validation controls in web development and give an example of a validation control.

Or

(b) Discuss the role of navigation controls in web development and provide an example of a navigation control.

13. (a) What is tracing in the context of web development, and how does it aid in debugging and monitoring web applications?

Or

(b) What are the advantages and limitations of using query strings for data transfer in web applications?

14. (a) Discuss the common steps involved in creating a simple ADO.NET sample program that connects to a database, retrieves data, and displays it in a user interface.

Or

(b) Differentiate between the DataList, DataGrid, and Repeater controls in ADO.NET, and provide examples of scenarios where each control is typically used.

15. (a) How does XSLT help in transforming an XML document into another format, and what are some common use cases for such transformations?

Or

(b) What is the purpose of an XML Schema (XSD), and how does it ensure the integrity of XML data?

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Describe the significance of namespaces in .NET programming. Explain how namespaces help organize code and prevent naming conflicts, and provide an example of a situation where namespaces are crucial.

Or

(b) Explain the purpose of the web. config file in ASP.NET. Discuss the types of configuration settings it can contain and their significance in application development.

17. (a) Explain the role of client-side and server-side validation in web forms. How can validation controls in ASP.NET help ensure data integrity and security?

Or

(b) Describe the purpose of site navigation controls in web development. Provide an example of a navigation control and explain its role in improving website usability.

18. (a) Compare and contrast various state management techniques, such as session, view state, query string, and cookies. Discuss their advantages, limitations, and typical use cases.

Or

(b) Describe potential challenges and best practices for managing session state in a web farm or load-balanced environment.

19. (a) Explain the key components of ADO.NET that are essential for data access in .NET applications.

Or

(b) What is data binding in the context of ADO.NET, and why is it important in user interface development?

20. (a) Discuss the key characteristics of XML and its advantages over other data formats. Provide examples of scenarios where XML is commonly used.

Or

(b) Explain the fundamental concept of web services and their role in enabling interoperability between diverse systems and platforms.

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(6 pages)

Reg. No. : .....

Code No. : 10565 E **Sub. Code : CMIT 63/ CMCT 63**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Sixth Semester

Information Technology/Computer Science and I.T. – Core

PYTHON PROGRAMMING

(For those who joined in July 2021–2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which of the following is the correct extension of the Python file?

(a) .python (b) .pl

(c) .py (d) .p

2. Which of the following is NOT a reserved word in Python?

(a) for (b) if

(c) speed (d) while

3. Which of the following is not used as loop in Python?

(a) for loop (b) while loop

(c) do-while loop (d) none of the above

4. Which of the following is a Python tuple?

(a) {1, 2, 3} (b) { }

(c) [1, 2, 3] (d) (1, 2, 3)

5. Which of the following refers to mathematical function?

(a) sqrt (b) rhombus

(c) add (d) rhombus

6. Which of the following is an example of a built-in function in Python?

(a) my_function() (b) define_function()

(c) print() (d) call_function()

7. What method is used to write data to a file in Python?

(a) read() (b) append()

(c) write() (d) open()

8. What is the method used to change the current working directory in Python?

(a) change_directory() (b) cd()

(c) chdir() (d) setcwd()

9. Which of the following is not a character class in regular expressions?

(a) \d (b) \w

(c) \s (d) \c

10. Which term describes the ability of a class to have more than one method with the same name but different implementations?

(a) Encapsulation

(b) Inheritance

(c) Polymorphism

(d) Abstraction

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Explain the data types supported by python.

Or

(b) Explain logical operators in Python.

12. (a) Describe the *for loop* with example.

Or

(b) How to slice a list in Python? Explain.

13. (a) Write a program to print *n numbers* iteratively using function.

Or

(b) Describe the different ways parameters can be passed to a function in Python.

14. (a) Explain the concept of data streams in Python.

Or

(b) Explain the process of reading data from a file in Python.

15. (a) Describe the process of creating classes in Python.

Or

(b) Describe class variables in Python classes.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 600 words.

16. (a) Explain output statement with example program.

Or

(b) How do you execute a Python script from the command line? Explain with example.

17. (a) Illustrate the ways of creating the Tuple and the Tuple assignment with suitable programs.

Or

(b) Describe the operations of Dictionaries.

18. (a) Explain the difference between type conversion and type coercion in Python.

Or

(b) Explain how functions can be stored and accessed using dictionaries in Python.

19. (a) Describe the hierarchy of exceptions in Python.

Or

(b) Discuss strategies for handling multiple exceptions in Python.

20. (a) Categorize the types of inheritance in python.

Or

(b) Explain the concept of quantifiers in regular expressions.

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(6 pages) **Reg. No. :** .....

Code No. : 10566 E **Sub. Code : CAIT 11/ CACT 11**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

First Semester

Information Technology/Computer Science and Information Technology – Allied

OFFICE AUTOMATION

(For those who joined in July 2021-2022 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which is not an edition of MS Word?

   (a) MS Word 2003 (b) MS Word 2007

   (c) MS Word 2010 (d) MS Word 1020

2. The _____ works with the standard Copy and Paste commands.

   (a) View tab (b) Paragraph dialog box

   (c) Office Clipboard (d) All of these

3. Which enables us to send the same letter to different people?

(a) Macros (b) Template

(c) Mail merge (d) None of above

4. Select all the text in MS Word document by _____.

(a) Ctrl+ S (b) Ctrl+ 1

(c) Ctrl+ A (d) Ctrl+ V

5. Excel is a ____ program developed by Microsoft.

(a) Spreadsheet

(b) Document

(c) Data management

(d) All of the above

6. What is the extension of a Microsoft Excel file?

(a) msxcl (b) xcl

(c) xlsx (d) xlsm

7. Which of the following is not a database object?

(a) Tables (b) Queries

(c) Relationships (d) Reports

8. In a database table, a category of information is called _____.

(a) Record (b) Tuple

(c) Field (d) None of the above

9. In MS PowerPoint presentations, the designs regulate the layout and formatting for the slide. These are commonly known as_____.

(a) Blueprints (b) Placeholders

(c) Templates (d) Design Plates

10. Which of these PowerPoint features would allow any user to create a given simple presentation quicker?

(a) Animations

(b) Chart Wizard

(c) Transition Wizard

(d) AutoContent Wizard

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) How will you save and close the word document? Explain.

Or

(b) Explain the undoing operation in MS word document.

12. (a) Write down the steps to setting the top and bottom margins in word document.

Or

(b) What are the steps to setting page numbers on your document? Explain.

13. (a) Analyse the simple calculations using mathematical in MS Excel.

Or

(b) Illustrate the steps to create simple graphs of MS Excel.

14. (a) Elaborate the objects of a relational database.

Or

(b) Describe the steps to save the table in MS Access.

15. (a) Explain the steps to create a simple presentation in MS PowerPoint.

Or

(b) Mention the steps to add graphics to PowerPoint presentation.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 600 words.

16. (a) Determine the automatic correction of spelling in word document.

Or

(b) Outline how to change the page size of a word document.

17. (a) What is mail merge? What are the advantages of mail merge? Explain.

Or

(b) Elaborate the purpose of delete a column in table in MS Word document.

18. (a) List out the various types of functions of MS Excel and explain

Or

(b) Analyse the changing size of a work book and excel window.

19. (a) Explain the steps to define primary key in MS Access.

Or

(b) Discuss the methods of creating database in MS Access.

20. (a) Formulate the charts and tables in MS PowerPoint.

Or

(b) Elaborate the uses of slide transition in MS PowerPoint.

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(6 pages) **Reg. No. :** .....

Code No.: 10567 E **Sub. Code: CAIT 21/ CACT 21**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Second Semester

Information Technology / Computer Science and Information Technology

DIGITAL DESIGN

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer:

1. The binary number 10101 in equivalent to decimal number ————————.

(a) 19 (b) 12

(c) 27 (d) 21

2. The convert the binary number 1011010 to hexadecimal number.

(a) 5C (b) 5D

(c) 5A (d) 5B

3. ———— can be determined the Instability condition.

(a) Table (b) Logic diagram

(c) Map (d) Graph

4. For every possible combination of logical states, the inputs which shows the logical state of digital circuit output.

(a) Function table (b) ASCII table

(c) Truth table (d) Routing

5. For a 4 bit parallel adder, if the carry is connected to a logical high, the result is ————.

(a) Same as if tied low

(b) A one will be added to the 4 bit result

(c) None

(d) A one will be added to the final result

6. Normally, the synchronous counter is designed using.

(a) S.R. Flip Flop (b) J.K. Flip Flop

(c) R.S. Flip Flop (d) None

7. The sequencial circuit design is used to ————.

(a) Count down

(b) Count up

(c) Decade an end point

(d) Count in a random order

8. In master-slave flip flop, when in the master enabled?

(a) When the gate is low

(b) When gate in high

(c) Both of the above

(d) None

9. The basic multiplexer principle can be demonstrated through the use of ————.

(a) Single pole relay

(b) Rotary switch

(c) DPDT switch

(d) Linear stepper

10. How many different states does a 3 bit asynchronous counter have?

(a) 2 (b) 4

(c) 8 (d) 16

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Discuss about AND gate.

Or

(b) Prove the following them

$x + \bar{x}y = x + y$

12. (a) Describe product of sum.

Or

(b) Draw the logic symbols and Truth tables for OR and NAND gates.

13. (a) Explain in detail about seven segment decoder.

Or

(b) Draw and explain Block diagram, function table and logic diagram of 8 to 1 line multiplexer.

14. (a) Draw the logic diagram of J.K. flip flop and explain with the help of truth table.

Or

(b) Differentiate Encoder and Decoder.

15. (a) What are the applications of shift register?

Or

(b) Explain memory Reference Instruction.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Briefly explain with diagram of NOR gate.

Or

(b) Perform the following operations.

(i) $(2671)_8 = ?_{10}$

(ii) $(205)_8 = ?_2$

(iii) $(56)_8 = ?_{16}$

17. (a) (i) With an example show how Karnaugh map can be used for minimizing the logical expression.

(ii) Convert the following into decimal

(1) $(10.10001)_2$

(2) $(101110.0101)_2$

Or

(b) Briefly explain about R.S. Flip Flop.

18. (a) Draw a full adder circuit and explain its operation with truth table.

Or

(b) Draw a four bit binary asynchronous counter and explain its operation.

19. (a) What is ripple counter? Design a MOD 9 ripple counter.

Or

(b) Describe in detail the Internal organisation of ROM.

20. (a) Briefly explain about computer Instructions.

Or

(b) Write short notes on

(i) Timing and control

(ii) Instruction cycle

———————

(6 pages) **Reg. No. :** .....

Code No. : 10568 E **Sub. Code : CAIT 31/ CACT 31**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Third Semester

Information Technology/Computer Science and I.T.

Allied – DATA STRUCTURES

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. In general, the index of the first element in an array is _____.

   (a) 0 (b) -1

   (c) 2 (d) 1

2. How is the 2nd element in an array accessed based on pointer notation?

   (a) $*a+2$ (b) $*(a+2)$

   (c) * (*a + 2) (d) $\&(a+2)$

3. Which of the following is false about a doubly linked list?

   (a) We can navigate in both the directions

   (b) It requires more space than a singly linked list

   (c) The insertion and deletion of a node take a bit longer

   (d) Implementing and deletion of a node take a bit longer

4. Which matrix has most of the elements (not all) as Zero?

   (a) Identity Matrix (b) Unit Matrix

   (c) Sparse Matrix (d) Zero Matrix

5. Which of the following data structures finds its use in recursion?

   (a) Stack (b) Arrays

   (c) Linked list (d) Queue

6. Which of the following data structures allow insertion and deletion from both end

   (a) Stack (b) Queue

   (c) Dequeue (d) Array

7. If several elements are competing for the same bucket in the hash table, what is it called?

(a) Diffusion (b) Replication

(c) Collisiond (d) Duplication

8. Which type of traversal of binary search tree outputs the value in sorted order?

(a) Pre-order (b) In-order

(c) Post-order (d) None of the above

9. The time complexity of help sort in worst case is

(a) O(logn) (b) O(n)

(c) O(n logn) (d) $O(n^2)$

10. Where is linear searching used?

(a) When the list has only a few elements

(b) When performing a single search in an unordered list

(c) Used all the time

(d) When the list has only a few elements and when performing a single search in an unordered list

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Write about linear and non-linear data structures.

Or

(b) Explain in detail about how memory to be allocated for an array.

12. (a) Discuss single linked list and its representation of a linked list in memory.

Or

(b) How will you traverse in a circular linked list? Demonstrate it with example.

13. (a) Categorize the various ways of representation of a stack. (a)

Or

(b) Convert the given expression $(A + B) * (C * D.E) * F / G$ from infix to position.

14. (a) Illustrate any two hash functions with examples.

Or

(b) Explicate linear representation of a Binary tree.

15. (a) Elucidate Straight Insertion Sort algorithm with example.

Or

(b) Examine Linear Search with array.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 600 words.

16. (a) Write an algorithm for sorting an array and traversing in an array.

Or

(b) Outline the concept of Two-dimensional array with an example.

17. (a) Illustrate insertion in a Double linked list.

Or

(b) Enumerate polynomial representation with example.

18. (a) Classify the various operations on Stack.

Or

(b) Illustrate evaluation of a postfix expression algorithm with an example

19. (a) Discuss closed hashing with Hashlinear probe algorithm.

Or

(b) Demonstrate insertion operation on a binary tree with example

20. (a) Analyze Quick sort algorithm with example

Or

(b) Examine linear searching with linked list.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10570 E **Sub. Code : CNIT 31/ CNCT 31**

U.G. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Third Semester

Information Technology/Computer Science and I.T

Non Major Elective – SOFTWARE FUNDAMENTALS

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A person responsible for designing writing and modifying computer programs is known as

   (a) System analyst

   (b) Software Engineer

   (c) Computer programmer

   (d) Maintenance engineer

2. A ———— is a pictorial representation of an algorithm in which the steps are drawn in the form of different shapes of boxes and the logical flow is indicated by interconnecting arrows

(a) program (b) Algorithm

(c) flow chart (d) both (a) and (c)

3. The ———— error occurs when the rules of the programming languages are not followed

(a) Run time (b) Syntax

(c) Flow (d) None

4. ———— is the idea of allowing the same code to be used with the different types resulting in more general and abstract implementations

(a) Encapsulation (b) Object

(c) Polymorphism (d) Inheritance

5. Expansion of COBOL is ————

(a) Computer Business Oriented Language

(b) Common Business Object Language

(c) Common Business Oriented Language

(d) Computer Binary Oriented Language

6. A ———— is a kind of translator that it translate a high level language program into assembly program

(a) interpreter (b) compiler

(c) linker (d) assembler

7. A set of instructions which control the sequence of operations are known as ————

(a) Hardware (b) Software

(c) Program (d) Driver

8. A ———— is a system program which is responsible for proper functioning of the device attached to the computer

(a) Device driver (b) Software

(c) Device (d) All the mentioned

9. What kind of data can you send by email

(a) audio only

(b) audio, pictures only

(c) video only

(d) audio, video, text and images

10. Which of the following is a search engine?

(a) Macromedia Flash (b) Google

(c) Internet Explorer (d) Dream weaver

PART B — (5 × 5 = 25 marks)

Answer ALL questions by choosing (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write an algorithm determining largest of three numbers.

Or

(b) Outline the flow chart symbols with an example.

12. (a) Distinguish between structured programming and unstructured programming approaches.

Or

(b) List and explain the characteristics of a good program.

13. (a) Specify and explain the classification of programming languages.

Or

(b) Identify any five popular high level languages and explain about them.

14. (a) Present an elaborate note on language translators.

Or

(b) Distinguish between firmware and live ware.

15. (a) Explain the following internet terms :

(i) World Wide Web

(ii) Browsers

Or

(b) How do you get connected with the Internet?

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions by choosing (a) or (b).

Each answer should not exceed 600 words.

16. (a) Elaborately explain program development cycle with its block representation.

Or

(b) Illustrate the four quadrants of the decision tables with an example.

17. (a) Explain White box testing with its advantages and disadvantages.

Or

(b) Express the following

(i) program documentation

(ii) inheritance.

18. (a) Propose any eight features of good programming languages.

Or

(b) Compare assembly languages and the machine languages.

19. (a) Explicate the concepts of system software.

Or

(b) What are application softwares? Explain any five application software packages.

20. (a) Present an illustration of composing and sending an e-mail?

Or

(b) Enumerate the internet applications. Explain any four.

———————

(6 pages)

Reg. No. : .....

Code No. : 10571 E **Sub. Code : CNIT 41/ CNCT 41**

U.G. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Fourth Semester

Information Technology / Computer Science and Information Technology

Non Major Elective – FUNDAMENTALS OF INTERNET

(For those who joined in July 2021–2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. DNS means ————————

(a) Domain Name System

(b) Double Name System

(c) Different Name Service

(d) Domain Naming Service

2. A large number of several computer networks spreading across the world is

(a) Internet

(b) WWW

(c) Wide area network

(d) None of the above

3. Linked pages are called as

(a) Hypertext

(b) Webpages

(c) Links

(d) Hyperlinks

4. Which one is a search engine?

(a) Hotmail (b) G–mail

(c) Google (d) Y-mail

5. ———— as a method to transfer mail from one user to another.

(a) UDP (b) SMTP

(c) FTP (d) TCP

6. Web access is a program available to analysis the ———————— to site.

(a) Visitor (b) Hacker

(c) Programmer (d) All of these

7. M–Commerce means _____

(a) Multiple Commerce

(b) Media Commerce

(c) Mobile Commerce

(d) Mobility Commerce

8. Which trade is between customer and seller?

(a) B2C (b) B2B

(c) C2C (d) C2B

9. The ———————— is a kind of cybercrime.

(a) Hacking (b) Update

(c) Threats (d) Delete

10. A ———————— attack is when a malicious party.

(a) Spoofing (b) Download

(c) Upload (d) All of these

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) What are the advantages of Internet.

Or

(b) Write short notes on E-Mail.

12. (a) Explain types of website.

Or

(b) Write about URL.

13. (a) Write about web hosting.

Or

(b) Discuss about front page and Dreamweaver.

14. (a) Explain advantages of E-Commerce

Or

(b) Write short notes on Cookie.

15. (a) Discuss about social networks.

Or

(b) Explain Internet Threats and it types.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain Internet Services in detail.

Or

(b) Explain the next generation technologies.

17. (a) Discuss about types internet access.

Or

(b) Explain the types of Internet accounts.

18. (a) Discuss the structure of the website with an example.

Or

(b) Explain website promoting methods.

19. (a) Explain marketing strategies on the web.

Or

(b) Describe various issues of E-Commerce and M-Commerce.

20. (a) Discuss about Firewalls and Intrusion Prevention Systems.

Or

(b) What is Blogs in Internet? What are the uses of Blogs?

———————

(6 pages) **Reg. No. :** .....

Code No. : 10576 E **Sub. Code : CEIT 61/ CECT 61**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Sixth Semester

Information Technology/Computer Science and I.T

Major Elective — BIG DATA ANALYTICS

(For those who joined in July 2021–2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Data in ———————— bytes size is called big data.

   (a) Tera (b) Giga

   (c) Peta (d) Meta

2. What are the V's of big data?

   (a) Variety (b) Velocity

   (c) Volume (d) All of these

3. Which step is executed by the data scientist after obtaining the data?

(a) Data Replication (b) Data Integration

(c) Data Cleansing (d) Data Saving

4. Which of the following emphases on the discovery of earlier properties that are not known on the data?

(a) Machine Learning (b) Big Data

(c) Data mining (d) Database

5. The big data word coined in ———— year.

(a) 1980 (b) 1970

(c) 1990 (d) 2000

6. ———— algorithms are used with discrete data.

(a) Classification (b) Regression

(c) Clustering (d) Grouping

7. ———— is a process of finding the correlations between dependent and independent variables.

(a) Classification (b) Regression

(c) Clustering (d) Grouping

8. ———————— learning is the machine learning task of learning a function that maps an input to an output based on example input-output pairs.

(a) Supervised (b) Unsupervised

(c) Reinforcement (d) Structured

9. ———————— learning involves training a model on unlabeled data

(a) Supervised (b) Unsupervised

(c) Reinforcement (d) Structured

10. ———————— learning involves training a model through trial and error.

(a) Supervised (b) Unsupervised

(c) Reinforcement (d) Structured

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Mention the advantages of big data analytics.

Or

(b) Discuss about data quality.

12. (a) Why and when can we use big data analytics? Explain.

Or

(b) List out the big data analytics applications.

13. (a) What are skills are required to be big data Analyst? Explain.

Or

(b) State the methods to construct the data in BOA.

14. (a) Compare regression with classification.

Or

(b) Discuss about clustering.

15. (a) What is machine learning algorithm? Explain.

Or

(b) Mention the features of machine algorithms.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Write detail notes on databases and raw data.

Or

(b) Elaborate the business opportunities and challenges in big data analytics.

17. (a) Compare traditional and advanced big data analytics methods.

Or

(b) Discuss about the Statistical and computational paradigm for BDA.

18. (a) Describe the third phase of data analytics process.

Or

(b) Explain – how to transform data into actionable knowledge?

19. (a) Discuss about supervised and unsupervised algorithms .

Or

(b) Write notes on K-means algorithm.

20. (a) Discuss about machine learning algorithms.

Or

(b) Write a case study on Amazon.

———————

(7 pages) **Reg. No. :** .....

Code No. : 10580 E **Sub. Code : CMCT 61**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024.

Sixth Semester

Computer Science and Information Technology – Core

DATA COMMUNICATION AND NETWORKING

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. In network terminology, what does "Topology" refer to?

   (a) Data transmission rates

   (b) Physical arrangement of network devices

   (c) Types of data packets

   (d) Network security protocols

2. Which mode of transmission allows data to flow in both directions but only one direction at a time?

   (a) Simplex (b) Half-duplex

   (c) Full-duplex (d) Multiplex

3. ———————— refers to the physical medium through which digital data is transmitted.

   (a) Modems

   (b) Digital Data Transmission

   (c) Transmission Media

   (d) Guided Media

4. What does DCE stand for in the context of digital data transmission?

   (a) Digital Circuit Equipment

   (b) Data Circuit-Terminating Equipment

   (c) Digital Connection Equipment

   (d) Data Conversion Equipment

5. In which multiplexing technique are multiple signals transmitted simultaneously using different wavelengths of light?

   (a) Multiplexing

   (b) Frequency Division Multiplexing (FDM)

   (c) Wave Division Multiplexing (WDM)

   (d) Time Division Multiplexing (TDM)

6. What does TDM stand for in the context of data transmission?
   (a) Time Division Modulation
   (b) Transmission Data Multiplexing
   (c) Time Division Multiplexing (TDM)
   (d) Transmitting Digital Modulation

7. In which network service does ISDN stand for
   (a) Internet Service Digital Network
   (b) Integrated Signal Data Network
   (c) Integrated Services Digital Network
   (d) Intelligent Switching Digital Network

8. What type of access does ISDN provide to its users?
   (a) Dial-up access
   (b) Broadband access
   (c) Wireless access
   (d) Satellite access

9. What is the purpose of Flow Control in data communication?
   (a) Detecting errors in transmitted data
   (b) Managing the flow of data between sender and receiver
   (c) Adding redundancy to ensure data integrity
   (d) Establishing and terminating connections

10. Which method of error detection uses Polynomial division to generate a checksum?

(a) Vertical Redundancy Check (VRC)

(b) Longitudinal Redundancy Check (LRC)

(c) Cycle Redundancy Check (CRC)

(d) Checksum

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Discuss the significance of topology in networking and explain the characteristics of common network topologies.

Or

(b) Explain the concept of transmission Mode in data communicate and differentiate between simplex half duplex and full-duplex modes.

12. (a) Discuss the role of Interfaces in the transmission of digital data.

Or

(b) Discuss Data Transmission and discuss the signification of DTE-DCE Interface in this process.

13. (a) Infer the concept of Wave Division Multiplexing (WDM) and its advantages in Optical communication system.

Or

(b) Explain the operation of Time Division Multiplexing (TDM) and its significance in digital communication systems.

14. (a) What is the significance of integrated services digital network (ISDN) in telecommunications?

Or

(b) Discuss the historical development and evolution of ISDN services.

15. (a) Examine the role of flow control in data link control and discuss its significance in managing data transmission between sender and receiver.

Or

(b) Describe the concept of Error Correction in data communication and evaluate its – effectiveness in ensuring data integrity.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss the model in data communication, focusing on its layered architecture and the function of each layer.

Or

(b) Discuss the significance of Transmission Modes in data communication.

17. (a) Discuss the characteristics and classifications of transmission media, including guided and unguided media, and their suitability for different communication environments.

Or

(b) Examine the significance of Interface Standards in digital data transmission systems.

18. (a) Evaluate the advantages and limitations of Multiplexing in telecommunications.

Or

(b) Analyze the principles and applications of Frequency Division Multiplexing (FDM) in telecommunication.

19. (a) Discuss the challenges and opportunities in the future of ISDN.

Or

(b) Examine the evolution of Broadband ISDN (B-ISDN) and its impact on modern telecommunications.

20. (a) Illustrate the concept of Checksum as an error detection method in data communication.

Or

(b) Evaluate the significance of Error Control in data communication systems.

———————

(7 pages) **Reg. No. :** .....

Code No. : 10581 E **Sub. Code : CMCT 62**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024

Sixth Semester

Computer Science and Information Technology – Core

MACHINE LEARNING

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. In Decision Tree learning, what does the term 'Inductive bias' refer to?

   (a) The inherent limitations of the model

   (b) The ability to generalize from specific examples

   (c) The process of feature selection

   (d) The criteria for splitting nodes in the tree

2. What is the purpose of Candidate Eliminations in machine learning?

   (a) To identify potential solutions

   (b) To refine the hypothesis space

   (c) To evaluate model performance

   (d) To select optimal hyperparameters

3. What is the primary focus of Neural Network Representation Problems in machine learning?

   (a) Model evaluation techniques

   (b) Understanding activation functions

   (c) Handling data preprocessing

   (d) Representing information in neural networks

4. Which type of neural network is known for its binary classification capabilities?

   (a) Perceptrons

   (b) Multi layer Networks

   (c) Recurrent Neural Networks

   (d) Convolutional Neural Networks

5. Which approach in machine learning emphasizes finding the model that best balances accuracy and complexity?

   (a) Maximum Likelihood

   (b) Minimum Description Length

   (c) Bayesian

   (d) Bayes Classifier Complexity

6. In machine learning, what is the primary role of the Bayes Optimal Classifier?

   (a) Maximizing likelihood estimation

   (b) Handling missing data

   (c) Finding the optimal decision boundary

   (d) Achieving the lowest classification error rate

7. ———— is the fundamental principle behind K-Nearest Neighbor Learning in machine learning.

   (a) Clustering data points based on similarity

   (b) Training a decision boundary to separate classes

   (c) Assigning weights to features based on importance

   (d) Learning from the nearest neighbors in the feature space

8. What method does Locally Weighted Regression employ to make predictions for new data points?

(a) Assigning equal weights to all training instances

(b) Fitting a global linear model to the entire dataset

(c) Giving higher weights to nearby data points during prediction

(d) Using a fixed kernel function for all instances

9. ———— is the primary focus of Learning Sets of Rules in machine learning.

(a) Training deep neural networks

(b) Discovering patterns and rules from data

(c) Clustering data points based on similarity

(d) Performing dimensionality reduction

10. Which algorithm is commonly used for learning rule sets sequentially by covering positive instances?

(a) Sequential Covering Algorithm

(b) Reinforcement Learning

(c) Analytical Learning

(d) Inverting Resolution

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain the significance of Introduction to Learning Problems in machine learning.

Or

(b) What are the key components of Concept Learning Version in machine learning?

12. (a) Explain the concept of Neural Network Representation Problems in machine learning.

Or

(b) Describe the characteristics and capabilities of Perceptrons in neural networks.

13. (a) Explain the significance of Bayes Theorem in machine learning.

Or

(b) Describe the concept of Learning and its importance in machine learning.

14. (a) Explain the concept of K-Nearest Neighbor (KNN) Learning and its role in machine learning.

Or

(b) Discuss the principle behind Locally Weighted Regression and its advantages over global regression models.

15. (a) Explain the concept of Sequential Covering Algorithm in machine learning.

Or

(b) Discuss the significance of Learning Rule Set First Order in machine learning.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss strategies to address concept drift and versioning issues in machine learning applications.

Or

(b) Evaluate the role of Representation, Algorithm, and Heuristic Space Search in machine learning.

17. (a) Discuss the significance of neural network representation problems in the context of feature learning and extraction.

Or

(b) Evaluate the impact of advanced topics in neural networks on real-world applications.

18. (a) Discuss the Bayes Optimal Classifier and its theoretical optimality in classification tasks.

Or

(b) Examine the role of Gibbs Algorithm in probabilistic graphical models and its application in inference tasks.

19. (a) Compare and contrast the K-Nearest Neighbor (KNN) Learning algorithm with Locally Weighted Regression (LWR).

Or

(b) Examine the role of Radial Basis Functions (RBF) in machine learning.

20. (a) Examine the FOCL (First Order and Clause Learning) Algorithm and its significance in machine learning.

Or

(b) Discuss the principles of Reinforcement Learning and its application in machine learning.

———————

(7 pages) **Reg. No. :** .....

Code No. : 10582 E **Sub. Code : CACT 41**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024.

Fourth Semester

Computer Science and Information Technology – Allied

COMPUTER ORIENTED NUMERICAL METHODS

(For those who joined in July 2021-2022 onwards)

Time : Three hours Maximum : 75 marks

SECTION A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. The departure from the straight line relationship is ————————.

   (a) Linearity

   (b) Stiction

   (c) Drift

   (d) Non-linearity

2. In method of least square $y = ax + b$, if $\sum x = 0$ then the formula for find b is?

(a) 0 (b) $\sum y / n$

(c) $\sum x / n$ (d) 1

3. Newton Raphson method is also known as ———— method.

(a) chord (b) tangent

(c) diameter (d) secant

4. Numerical techniques commonly involve ———— method.

(a) iterative (b) direct

(c) elimination (d) reduction

5. Gauss Elimination process is also known as ———— Elimination.

(a) Backward (b) Forward

(c) Sideways (d) Crossways

6. Which method is iterative method for solving linear system of equations?

(a) Gauss Jordan

(b) Jacobi

(c) Gauss Elimination

(d) None

7. Order of trapezoidal rule ————————.

(a) 1 (b) 3

(c) 2 (d) 4

8. Simpson's 1/3rd rule and direct integration are same if the entire curve is a ————————.

(a) cycloid (b) hyperbola

(c) parabola (d) straight line

9. How many steps does the 4th order Runge-Kutta method use?

(a) one step (b) two steps

(c) three steps (d) four steps

10. The final corrector of the fourth order Runge-Kutta method uses ———————— rule.

(a) Midpoint rule

(b) Backward Euler's

(c) Simpson's

(d) Trapezoidal

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) By the method of least squares find the straight line to the data.

x :	5	10	15	20	25
y :	16	19	23	26	30

Or

(b) Write a note on curve fitting using fit a straight line method.

12. (a) Find the real root of the equation $\cos x = 3x - 1$ using iterative method.

Or

(b) Find the real root of the equation $x^3 + x^2 - 100$ using bisection method.

13. (a) Solve the system of equations using Gauss-Jacobi iteration method.

$4x + 2y + z = 14$; $x + 5y - z = 10$;
$x + y + 8z = 20$.

Or

(b) Solve the system of equation using Gauss Elimination method.

$3x + y - z = 3$; $2x - 8y + z = -5$;
$x - 2y + 9z = 8$

14. (a) Given the following data find the value of $y'(6)$.

x :	0	2	3	4	7	8
y :	4	26	58	112	466	668

Or

(b) Evaluate $\int_0^1 \frac{dx}{1+x^2}$ using Trapezoidal rule with $h = 0.2$.

15. (a) By 2nd order Runge-Kutta method find $y(0.1)$ from $y' = x + y$, $y(0) = 1$ with $h = 0.1$.

Or

(b) Write a formula for Adam's predictor and corrector method.

SECTION C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Illustrates about the curve fitting by the method of least square.

Or

(b) Fit a straight line to the data and estimate the sales in the year 1957.

Year :	1951	1961	1971	1981	1991
Sales :	10	12	8	10	13

17. (a) Write down Newton's Raphson formula to find $\sqrt{k}$, $k > 0$, and hence find $\sqrt{5}$.

Or

(b) Find the approximate value of the real root of $x \log_{10} x = 1.2$ by regula falsi method.

18. (a) Solve the system of equations using Gauss-Seidel iteration method.

$8x - y + z - 18 = 0$; $2x + 5y - 2z - 3 = 0$;

$x + y - 3z + 6 = 0$.

Or

(b) Solve $x + 3y \_ 3z = 16$; $x + 4y + 3z = 18$; $x + 3y + 4z = 19$ by Gauss-Jordan method.

19. (a) Find the value of $\log 2^{1/3}$ from $\int_0^1 \frac{x^2}{1+x^3} dx$ using Simpson's 1/3rd rule with $h = 0.25$.

Or

(b) Evaluate the integral $\int_0^{\frac{\pi}{2}} \sin x dx$ using Simpson's 3/8th rule and compare the result with Simpson's 1/3rd rule.

20. (a) By fourth order Runge-Kutta method find $y(0.2)$ from $y' = y - x$, $y(0) = 2$ with $h = 0.1$.

Or

(b) Given $y' = y - x^2$, by $y(0) = 1$, $y(0.2) = 1.12186$, $y(0.4) = 1.46820$, $y(0.6) = 1.7379$ compute the value of $y(0.8)$ by Milne's predictor-corrector method.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10585 E **Sub. Code : CECT 53**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Fifth Semester

Computer Science and Information Technology

Major Elective — MOBILE COMPUTING

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which of the following is used for connecting two LAN's in two different building?

   (a) Bridge

   (b) Hub

   (c) Gateway

   (d) All

2. Bluetooth connectivity among a set of devices is ————————

(a) Scatternet (b) Piconet

(c) Mininet (d) Multinet

3. ———————— can provide information about the current location of the user.

(a) GSM (b) GPS

(c) Both (d) None

4. Collision Detection and Collision Avoidance techniques are provided in ———————— scheme.

(a) ALOHA (b) CSMA

(c) Reservation Bored (d) Slotted ALOHA

5. ———————— deals with the delivery of data from a data repository to large number of clients.

(a) Data Replication (b) Data Dissemination

(c) Data Transaction (d) All

6. A connection-oriented protocol is ————————

(a) UDP (b) TCP

(c) SMTP (d) All

7. A ———————— is a self-organizing network of tiny sensor nodes.

(a) WSN (b) WAN

(c) Wi-Fi (d) All

8. UIQ Interface is a software package for ———————— OS.

(a) Android (b) Microsoft

(c) Symbien (d) Unix

9. Supply chain management is an example for ———————— application.

(a) B2C (b) B2B

(c) Both (d) None

10. Technology for web access by a mobile client is ————————

(a) WAP (b) WSP

(c) J2ME (d) All

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain the components of WLAN with a neat diagram.

Or

(b) List down the characteristics of mobile computing.

12. (a) Describe the classification of MAC protocols.

Or

(b) Explain Dynamic Host Configuration Protocol in detail.

13. (a) Illustrate the functions of TCP/IP protocol stack with a neat diagram.

Or

(b) How does TPS recovery take place in mobile databases?

14. (a) Describe the architecture of sensor node.

Or

(b) Write short notes on Palm OS.

15. (a) Explain the protocols in WAP.

Or

(b) Describe the structure of mobile commerce.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain the components of wireless communication system.

Or

(b) Describe the different categories of services provided by GSM.

17. (a) Explain the categories of fixed assignment MAC protocols.

Or

(b) Summarize the key mechanism used in mobile IP.

18. (a) Discuss the protocols and terminologies associated with TCP/IP.

Or

(b) Elaborate the operation of TCP.

19. (a) Classify WSN routing protocols based on :

(i) Protocol operation and

(ii) Network structure.

Or

(b) Intercept the strategies for target coverage.

20. (a) Explain WAP technology for web access by a mobile client.

Or

(b) Illustrate the use of Mobile Payment Systems.

———————

(6 pages)

Reg. No. : .....

Code No. : 10751 E **Sub. Code : EMCS 11**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

First Semester

Computer Science – Core

PYTHON PROGRAMMING

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL the questions.

Choose the correct answer :

1. Is Python case sensitive when dealing with identifiers?

   (a) no

   (b) yes

   (c) machine dependent

   (d) none of the mentioned

2. Which of the following is the correct extension of the Python file?

(a) .python

(b) .pl

(c) .py

(d) .p

3. Which of the following is not used as loop in Python?

(a) for loop (b) while loop

(c) do-while loop (d) none of the above

4. What will be the output of given Python code?

```
str1="hello"
c=0
for x in str1:
    if(x!="1"):
            c=c+1
      else:
            pass
print(c)
```

(a) 2 (b) 0

(c) 4 (d) 3

5. Which keyword is used for function?

(a) Fun (b) Define

(c) def (d) Function

6. What will be the output of the following Python code?

```
def printMax(a, (b):
    if a > b:
      print(a, 'is maximum')
    elif a == b:
      print(a, 'is equal to', b)
    else:
      print(b, 'is maximum')
 printMax(3, 4)
```

(a) 3

(b) 4

(c) 4 is maximum

(d) None of the mentioned

7. Which of the following commands will create a list?

(a) list1 = list( ) (b) list1 = [ ]

(c) list1 = list([1, 2, 3]) (d) all of the mentioned

8. Suppose listExample is ['h','e','l','l','o'], what is len(listExample)?

(a) 5 (b) 4

(c) None (d) Error

9. To open a file c:\scores.txt for reading, we use _____.

(a) infile = open("c:\scores.txt", "r")

(b) infile = open("c:\\scores.txt", "r")

(c) infile = open(file = "c:\scores.txt", "r")

(d) infile = open(file = "c:\\scores.txt", "r")

10. To read the next line of the file from a file object infile, we use _____.

(a) infile.read(2) (b) infile.read()

(c) infile.readline() (d) infile.readlines()

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write a note on Feature of Python.

Or

(b) Discuss input statements in Python, with an example.

12. (a) Explain 'While' Statement in Python with an example.

Or

(b) Explain Jump statement in python in detail.

13. (a) Illustrate Function Call in python with an example.

Or

(b) Explain dir( ) statement in python.

14. (a) How will you create Dictionary in Python?

Or

(b) Discuss any two List methods in Python.

15. (a) How will you open and close file in Python?

Or

(b) Discuss about renaming file in Python.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 600 words.

16. (a) How to define array in Python? How it process?

Or

(b) Write about (i) Data Type (ii) Output statement in Python.

17. (a) Discuss in detail about various 'if' statement in Python.

Or

(b) Write a program for Fibonacci number generation by using 'for' loop in python.

18. (a) Write a python program to implement default arguments.

Or

(b) Discuss about Python string function with example.

19. (a) Write about basic List operation in Python.

Or

(b) How to create a tuple in python? Explain it with suitable example.

20. (a) Differentiate read( ) and readline( ) in python with example.

Or

(b) Write about file position in Python.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10752 E **Sub. Code : EMCS 21**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024

Second Semester

Computer Science – Core

DATA STRUCTURE AND ALGORITHM

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. What is a data structure?

   (a) A programming language

   (b) A collection of Algorithms

   (c) A way to store and organize data

   (d) A type of computer hardware

2. Minimum number of fields in each node of a doubly linked list is ————————.

(a) 2 (b) 3

(c) 4 (d) 5

3. A queue follows : ————————.

(a) LIFO principle

(b) FIFO principle

(c) Linear Tree

(d) Ordered array

4. The terms push and pop related to : ————————.

(a) Array (b) Lists

(c) Stacks (d) Trees

5. The operation of processing each element in the list is known as ————————.

(a) Sorting (b) Merging

(c) Inserting (d) Traversal

6. Which of the following is non-linear data structure?

(a) Stack (b) List

(c) Strings (d) Trees

7. A graph in which all vertices have equal degree is known as ————————.

(a) Complete Tree

(b) Regular graph

(c) Multi graph

(d) Simple Graph

8. The data structure required for Breadth First Traversal on a graph is : ————————..

(a) Array (b) Stack

(c) Tree (d) Queue

9. Find the location of a given item in a collection of items is called : ————————.

(a) Discovering

(b) Finding

(c) Searching

(d) Mining

10. ———————— sorting is good to use when alphabetizing a large list of names.

(a) Merge (b) Heap

(c) Radix (d) Bubble

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) What is Doubly Linked List?

Or

(b) Expand and give a note on ADT.

12. (a) Write down any three applications of Queue.

Or

(b) What is Circular Queue?

13. (a) Differentiate : B Tree Versus B+ Tree.

Or

(b) Define the terms Binary Tree and Binary Search Tree.

14. (a) How to represent Graph?

Or

(b) Write down the three application of graph.

15. (a) What do you mean by Open Addressing?

Or

(b) Give a brief note on Hashing.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain in detail about Singly Linked List.

Or

(b) Illustrate Circular Linked List in detail.

17. (a) Write down any two operations done on stack.

Or

(b) How to convert infix to postfix expression? Explain with an example.

18. (a) Disucss in detail about AVL Trees.

Or

(b) What is expression Tree? List out application of Trees.

19. (a) Articulate Breadth First Traversal in detail.

Or

(b) Write short note on the following :

(i) Bi connectivity

(ii) Cut vertex.

20. (a) How do you implement Linear Search? Explain with an example.

Or

(b) Define Insertion Sort. Write a procedure for Insertion Sort.

———————

(7 pages) **Reg. No. :** .....

Code No. : 10753 E **Sub. Code : EECS 11**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024.

First Semester

Computer Science

Elective — DISCRETE MATHEMATICS

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer.

1. A ———————— is an ordered collection of objects.

   (a) relation

   (b) function

   (c) set

   (d) preposition

2. Which of the following two sets are equal?

(a) A = {1, 2} and B = {1}

(b) A = {1, 2} and B = {1, 2, 3}

(c) A = {1, 2, 3} and B = {2, 1, 3}

(d) A = {1, 2, 4} and B = {1, 2, 3}

3. Let $P = \{(x, y) : x^2 + y^2 = 1, x, y \in R\}$. Then, P is

(a) Reflexive (b) Symmetric

(c) Transitive (d) Anti-Symmetric

4. Suppose a relation R = {(3, 3), (5, 5), (5, 3), (5, 5), (6, 6)} and S = {3, 5, 6}. Here R is known as ———————.

(a) equivalence relation

(b) reflexive relation

(c) symmetric relation

(d) transitive relation

5. $p \wedge q$ is logically equivalent to ———————.

(a) $\neg(p \to \neg q)$ (b) $(p \to \neg q)$

(c) $(\neg p \to \neg q)$ (d) $(\neg p \to q)$

6. If A is any statement, then which of the following is a tautology?

(a) $A \wedge F$ (b) $A \vee F$

(c) $A \vee \neg A$ (d) $A \wedge T$

7. A compound proposition that is neither a tautology nor a contradiction is called a _____.

(a) Contingency (b) Equivalence

(c) Condition (d) Inference

8. Which of the following is true for matrices?

(a) $(AB)^{-1} = B^{-1} A^{-1}$ (b) $(A^{-1}) = A$

(c) $AB = BA$ (d) $A * 1 = 1$

9. Which of the following matrix is Skew Symmetric?

(a) $\begin{bmatrix} 0 & 1 \\ -1 & 0 \end{bmatrix}$ (b) $\begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$

(c) $\begin{bmatrix} 0 & 3 \\ -1 & 9 \end{bmatrix}$ (d) $\begin{bmatrix} 8 & -2 \\ -1 & 3 \end{bmatrix}$

10. Which of the following is the formula for calculating the inverse of the matrix?

(a) $\frac{2}{|A|} adj\, A$ (b) $\frac{1}{|A|} adj\, A$

(c) $\frac{-1}{|A|} adj\, A$ (d) $\frac{1}{|2A|} adj\, A$

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) (i) What is an ordered pair?
(ii) Define Cartesian product.

Or

(b) Describe :

(i) Cardinality of a set
(ii) Power set.

12. (a) Define and represent Relation and function.

Or

(b) What is equivalence relations? Give example.

13. (a) Write note on basic set of logical operators.

Or

(b) What is commutative law? Solve $P \vee Q ? Q \vee P$ using commutative law.

14. (a) Define Matrix. Mention its type.

Or

(b) Define Transpose of a matrix. How to find the transpose of a matrix?

15. (a) Calculate the adjoint of the matrix

$$A = \begin{bmatrix} 1 & -1 & 2 \\ 2 & 3 & 5 \\ 1 & 0 & 3 \end{bmatrix}$$

Or

(b) Find the inverse of the matrix $A = \begin{bmatrix} 1 & 2 & 3 \\ 0 & 1 & 4 \\ 0 & 0 & 1 \end{bmatrix}$ using the formula.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Illustrate about specification of sets.

Or

(b) What is identify of sets? Explain.

17. (a) Define function. Describe about representation of function.

Or

(b) Let A = {2, 3, 4} and B = {2, 6, 8}. Let R : A to B. For all $(a, b) \in A \times B$, $a \ R \ b \Leftrightarrow a \mid b$. Determine R and $R-1$. Draw arrow diagrams for both. Describe $R - 1$ in words .

18. (a) What are the operations of propositions? Explain.

Or

(b) Write about tautology. Prove that the statement $(p \to q) \leftrightarrow (\sim q \to \sim p)$ is a tautology.

19. (a) (i) Define skew symmetric matrix.

(ii) $A = \begin{bmatrix} 0 & -3 & 2 \\ a+2 & 0 & 3 \\ -2 & b-3 & 0 \end{bmatrix}$ is a skew symmetric matrix, then find the values of a and b.

Or

(b) (i) Properties of conjugate of a matrix

(ii) Find the conjugate of the matrix $A = \begin{bmatrix} 1+2i & 3-i & 4 \\ -2i & 5i & 6-3i \\ 7 & 8+2i & 9i \end{bmatrix}$.

20. (a) Determine whether the given matrix is a Singular matrix or not

$$\begin{bmatrix} 2 & 4 & 6 \\ 2 & 0 & 2 \\ 6 & 8 & 14 \end{bmatrix}$$

Or

(b) Find the inverse $A = \begin{bmatrix} 4 & 3 & 8 \\ 6 & 2 & 5 \\ 1 & 5 & 9 \end{bmatrix}$ of a matrix.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10754 E **Sub. Code : EECS 21**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Second Semester

Computer Science

Elective – DIGITAL LOGIC FUNDAMENTALS

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. What is the decimal equivalent of $(1101)_2$?

   (a) 13 (b) 11

   (c) 1011 (d) 19

2. Which code is used to send digital data over telephone lines

   (a) BCD (b) GRAY code

   (c) ASCII (d) EBCDIC

3. $AB + \overline{A}C + BC =$ ————————

(a) $(A + B)(\overline{A} + C)$ (b) $AB + \overline{A}C$

(c) $AB + BC$ (d) $\overline{A}C + BC$

4. How many fundamental products are there for four variables?

(a) 2 (b) 4

(c) 8 (d) 16

5. $A \oplus B =$ ————————

(a) $A + B$ (b) $AB + \overline{A}\overline{B}$

(c) $A\overline{B} + \overline{A}B$ (d) $\overline{A} + \overline{B}$

6. 2's complement of $(-96)_{10}$ is ————————

(a) 11100000 (b) 10100000

(c) 01010000 (d) 01001111

7. In $S - R$ flip-flop, if $Q = 0$ the output is said to be ————————

(a) Set (b) Reset

(c) Previous state (d) Current state

8. In which flip-flop output follows the input?

(a) RS (b) D

(c) JK (d) T

9. Which of the following flip flop is not used to construct registers?

(a) RS (b) D

(c) JK (d) T

10. In parallel shift registers, data shifting occurs _____

(a) 1 bit at a time (b) Simultaneously

(c) Two bit at a time (d) Four bit at a time

PART B — (5 × 5 = 25 marks)

Answer ALL questions by choosing (a) or (b).

Each answer should not exceed 250 words.

11. (a) (i) Convert binary 110.001 to a decimal number.

(ii) If a 16 bit number has all 1s, what is its decimal equivalent?

Or

(b) Write a note on Graycode.

12. (a) Write the consensus theorem.

Or

(b) What is the simplified Boolean equation for the following logic equation?

$F(A,B,C,D) = \Sigma m(7,9,11,12,13,14,15)$

13. (a) Write a note on multiplexer.

Or

(b) Perform binary addition $(-43)_{10}$ and $(-78)_{10}$.

14. (a) Write a note on RS flip flop.

Or

(b) Write a note on edge triggered D flip flop.

15. (a) Give the sketch of serial in parallel out register.

Or

(b) Give the sketch of parallel in parallel out register.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions by choosing (a) or (b).

Each answer should not exceed 600 words.

16. (a) Tabulate the BCD representation and Excess-3 code for Decimal 0 - 9.

Or

(b) Explain the universal logic gates.

17. (a) Construct the truth table for

(i) two input NOR gate

(ii) three input Ex-OR gate

Or

(b) Convert the following truth table to Karnaugh map and draw logic circuit.

A	B	C	Y
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	0
1	0	1	1
1	1	0	1
1	1	1	1

18. (a) Subtract $(-43)_{10}$ and $(-78)_{10}$ in binary form.

Or

(b) Explain 7 segment decoder.

19. (a) Explain edge triggered RS flip flop

Or

(b) Explain JK Master-Slave flipflop.

20. (a) Explain serial in parallel out register.

Or

(b) Explain universal shift register.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10755 E **Sub. Code : ESCS 11**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

First Semester

Computer Science

Skill Enhancement Course — OFFICE AUTOMATION

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which of the following is the brain of the computer?

   (a) Central Processing Unit

   (b) Memory

   (c) ALU

   (d) Control unit

2. ———————— is computers short-term memory that is lost when the computer is turned off.

(a) CPU (b) Hardware

(c) RAM (d) Processor

3. What is the blank space outside the printing area on a page?

(a) Clipart (b) Margin

(c) Header (d) Footer

4. Which of the following is an example of page orientation?

(a) Landscape (b) Subscript

(c) Superscript (d) A4

5. Formula palette is used to ————————

(a) format cells containing numbers

(b) create and edit formula containing functions

(c) enter assumptions data

(d) copy a range of cells

6. What is the extension of a Microsoft Excel file?

(a) .msxcl (b) .xcl

(c) .xlsx (d) .xlsm

7. ———————— is not a valid data type in MS Access.

(a) Auto number (b) Currency

(c) Memo (d) Picture

8. Which field type is selected to enter long text in that field?

(a) Text

(b) TextBox

(c) Memo

(d) Currency

9. The maximum percentage of zoom in PowerPoint is ————————

(a) 400% (b) 200%

(c) 350% (d) 100%

10. In PowerPoint, the objects on the slide to hold the text are called ————————

(a) Placeholders

(b) Textbox

(c) Object holder

(d) Text holders

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Give an account of memory unit in a computer.

Or

(b) Write a note on machine language.

12. (a) Give the steps to save and close a Word document.

Or

(b) Write a note on paragraph alignment and indentation.

13. (a) Write a note on the various options in format cells dialog box.

Or

(b) Write any five financial functions.

14. (a) Give the steps to search records.

Or

(b) Give the steps to link data files.

15. (a) Give the different types of views in PowerPoint.

Or

(b) Give the steps to include objects and pictures in a presentation.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain the anatomy of a computer.

Or

(b) Explain the features of Windows Operating System.

17. (a) Explain bullets and numbering.

Or

(b) Explain the process of spell check.

18. (a) Explain the steps to include a chart in a worksheet.

Or

(b) Explain the preparation of a financial statement.

19. (a) Explain the steps to create a table in Access.

Or

(b) Explain the design of queries.

20. (a) Explain the steps to create slide show.

Or

(b) Explain animation effects in slides.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10756 E **Sub. Code : ESCS 21**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Second Semester

Computer Science

Skill Enhancement Course – INTRODUCTION TO HTML

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which of the following tag is used to make the underlined text?

   (a) <i> (b)

   (c) <u> (d) <pre>

2. In HTML, the tags are ————————.

   (a) In upper case (b) Case sensitive

   (c) In lowercase (d) Not case sensitive

3. In HTML, we use the <hr> tag for ————————.

(a) horizontal ruler (b) new line

(c) new paragraph (d) vertical ruler

4. In HTML, the correct way of commenting out something would be using ————————.

(a) # and ## (b) <! – and – >

(c) </ – and – /> (d) <! – and – !>

5. How to create an ordered list in HTML?

(a) (b)

(c) (d) <i>

6. Find out the tag which is not relevant to create table in HTML?

(a) <tr> (b) <td>

(c) <table> (d) <head>

7. What is the default value of rows attribute?

(a) 0% (b) 100%

(c) 50% (d) 78%

8. Which of the following helps in controlling the visitors of the web page who uses only one choice from the list of many choices?

(a) Frame (b) Frameset

(c) RadioButton (d) Checkbox

9. What is DHTML primarily used for?

(a) Creating dynamic and interactive web pages

(b) Defining document structure

(c) Storing data on the server

(d) None

10. Which of the following is not a component of DHTML?

(a) HTML (b) CSS

(c) Javascript (d) PHP

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Differentiate between various generations of HTML, focusing on the key features introduced in each generation.

Or

(b) Write down the structure of an HTML document.

12. (a) Describe the different types of heading tags available in HTML tags.

Or

(b) Discuss the purpose and implementation of horizontal rules in web design.

13. (a) What do you mean by Nested List?

Or

(b) How to do coloring in Table cells?

14. (a) List out and describe any two attributes used in frames and frameset.

Or

(b) Which tag is used to get more than one line input from the user?

15. (a) Give a short note on the process of defining styles using CSS.

Or

(b) Differentiate between Inline, Internal and External style sheets in CSS.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Can you create a simple HTML document that contains hyperlinks and demonstrates basic formatting?

Or

(b) How do you create basic web page using few text formatting tags?

17. (a) Describe the processing of designing the body section of a web page. Discuss the key elements such as headings and paragraphs. How do these elements contribute to structuring and presenting content effectively?

Or

(b) Write a HTML Code to implement <img> tag.

18. (a) How to implement order list and unordered list in HTML? Give a sample code.

Or

(b) Display a student marksheet using table in HTML.

19. (a) How do you use frames in HTML? Explain.

Or

(b) Discuss in detail about Action and method attributes used in forms.

20. (a) What is Internal style sheet? Explain with an example.

Or

(b) How do you implement external style sheet in CSS?

———————

(6 pages) **Reg. No. :** .....

Code No. : 10757 E **Sub. Code : ESCS 22**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Second Semester

Computer Science

Skill Enhancement Course — UNDERSTANDING INTERNET

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which of the following is not considered hardware ————————?

   (a) Operating system (b) CPU

   (c) Keyboard (d) Hard disk

2. The brain of any computer is ———————— unit

   (a) Input (b) Output

   (c) Central processing (d) None

3. ———————— : a computer program that translates an entire set of instructions written in a higher-level language into machine language

(a) Interpreter (b) Compiler

(c) Assembler (d) None

4. Which one of the following is web programming language?

(a) C (b) JavaScript

(c) Pascal (d) Basic

5. Which of the following is a benefit of digital transformation in business processes?

(a) Increased reliance on manual tasks

(b) Enhanced complexity in work flows

(c) Improved efficiency and reduced operational costs

(d) None

6. The rise of big data and data analytics, which are allowing businesses to make more informed decisions by leveraging ———————— sets of data

(a) Large (b) Medium

(c) Small (d) None

7. A ———————— can be a hardware device or a software program that filters all the packets of data that comes through a network, the internet, etc

(a) Firewall (b) Antivirus

(c) Malware (d) Cookies

8. Which of the following malware types does not clone or replicate itself through infection?

(a) Viruses (b) Worms

(c) Trojans (d) Root kids

9. Which of the below is an internet fraud in a which a consumer is digitally persuaded to reveal personal data by cyber criminals ————————

(a) MiTM attack (b) Phishing attack

(c) Website attack (d) DoS attack

10. Which software is mainly used to help users detect viruses and avoid them?

(a) Malware (b) Adware

(c) Antivirus (d) None

PART B — (5 × 5 = 25 marks)

Answer ALL the questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Differentiate : Man versus machine.

Or

(b) Define the term data. How it will be useful for computer processing?

12. (a) What do you mean by translator? Write down the working principle of compilers and interpreter.

Or

(b) In what way office automation software is useful for real world?

13. (a) Define and describe healthcare.

Or

(b) Write short note on banking and financial services industry.

14. (a) What is computer security? List out the different types of computer security.

Or

(b) Give a short note on AAA server.

15. (a) What do you mean by cyber crime?

Or

(b) Define the term hacking and phishing.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) With neat diagram, explain the basic structure of the computer.

Or

(b) Discuss in detail about classification of computers.

17. (a) List out object oriented programming languages and explain its features.

Or

(b) What are the different types of modern programming languages available? Describe its features.

18. (a) Articulate digital transformation in business and features of digital transformation.

Or

(b) Explain in detail about virtual reality wearable medical devices.

19. (a) Write short notes on the following

(i) Ransomware

(ii) Worms

(iii) Trojan horse.

Or

(b) What do you mean by access control? Describe biometric access control.

20. (a) Define computer virus. Explain its types and give a note on Antivirus protection.

Or

(b) Illustrate attack using malware and ATM skimming.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10758 E **Sub. Code : EFCS 11**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

First Semester

Computer Science

Foundation Course — PROBLEM SOLVING TECHNIQUES

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. Which of the following is not an input device?

   (a) Track ball (b) Joystick

   (c) Plotter (d) Scanner

2. Which of the following is an operating system?

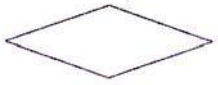
   (a) ForTran (b) COBOL

   (c) Linux (d) C++

3. Which was the first high level language?

(a) BASIC (b) ForTran

(c) Pascal (d) C

4.  symbol is used for ————————

(a) initiation (b) assignment

(c) input (d) decision

5. < = is ———————— Operator.

(a) arithmetic (b) relational

(c) logical (d) shift

6. If *x* is true and *y* is false, what is not *x*?

(a) undefined (b) error

(c) true (d) false

7. Which of the following help in creating efficient programs?

(a) integers (b) real

(c) strings (d) arrays

8. Number of allocations of storage locations by the statement Score [30, 5] is

(a) 30 (b) 152

(c) 148 (d) 150

9. Which of the following variable type can be accessed anywhere in a program?

(a) Static (b) Global

(c) Local (d) Register

10. The scope of a variable refers to ———————— of the variable.

(a) length (b) name

(c) data type (d) accessibility

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) List the characteristics of a computer.

Or

(b) Write a note on software.

12. (a) Write a note on arithmetic operators. Give examples.

Or

(b) Write a note on algorithm.

13. (a) Write a note on applications of selection structures.

Or

(b) Write a note on applications of repetition structures.

14. (a) Write a note on character based data.

Or

(b) Write a note on numeric data.

15. (a) Write a note DFDS and their types.

Or

(b) Discuss the scope of a variable.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain the types of computers.

Or

(b) Explain the features of good programming languages.

17. (a) Explain the different phases in program development cycle.

Or

(b) Draw a flow chart for a decision structure.

18. (a) Explain selecting from several alternatives with an example.

Or

(b) Explain controlled loops with examples.

19. (a) Explain one dimensional array with example.

Or

(b) Explain two dimensional array with example.

20. (a) Explain value and reference parameters.

Or

(b) Explain sequential file creation and modification.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10768 E **Sub. Code : EMIT 21/ EMCT 21**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Second Semester

Information Technology/Computer Science and I.T – Core

JAVA PROGRAMMING

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which component is used to compile, debug and execute the java programs?

(a) JRE (b) JIT

(c) JDK (d) JVM

2. Which one of the following is not a Java feature?

(a) Object-Oriented

(b) Use of pointers

(c) Portable

(d) Dynamic and Extensible

3. Number of primitive data types in Java are _____.

(a) 6 (b) 7

(c) 8 (d) 9

4. Which of these has highest precedence?

(a) () (b) ++

(c) * (d) >>

5. Which of these is used as a default for a member of a class if no access specifier is used for it?

(a) Private

(b) Public

(c) Public, within its own package

(d) Protected

6. If super class and subclass have same variable name, _____ keyword should be used to use super class.

(a) Super (b) This

(c) Upper (d) Classname

7. Using which of the following. multiple inheritance in Java can be implemented?

   (a) Interfaces

   (b) Multithreading

   (c) Protected methods

   (d) Private methods

8. Which interface is used to create thread in java?

   (a) Processor (b) Threadable

   (c) Runnable (d) Executor

9. Which of the following code is used to get an attribute in a HTTP Session object in servlets?

   (a) session.getAttribute(String name)

   (b) session.alterAttribute(String name)

   (c) session.updateAttribute(String name)

   (d) session.setAttribute(String name)

10. Which interface contains servlet lifecycle methods?

   (a) init (b) servlet

   (c) servletcontext (d) destroy

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Write about the basic concepts of object oriented programming.

Or

(b) Explain about java virtual machine.

12. (a) Discuss constants in java with example.

Or

(b) Discuss for-loop with example program.

13. (a) How will you define a class, create an object and access class members? Demonstrate it with example.

Or

(b) Explain about static member with example program.

14. (a) Analyze exception handling with examples.

Or

(b) Explicate thread priority with example.

15. (a) Comment on lava Servlet. Discuss java servlet architecture.

Or

(b) Examine grid layout with example.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Discuss Java program structure with example program.

Or

(b) Explain about the features of java.

17. (a) Illustrate any four types of operators with example.

Or

(b) Enumerate switch-case statement with example.

18. (a) Discuss hierarchical inheritance with example program.

Or

(b) Discuss abstract methods and classes with an example.

19. (a) Discuss multiple catch statements with example.

Or

(b) Demonstrate how will you implement interface with example.

20. (a) Analyze border layout with example.

Or

(b) Examine servlet API and its packages.

———————

(8 pages) **Reg. No. :** .....

Code No. : 10769 E **Sub. Code : EEIT 11/ EECT 11**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

First Semester

Information Technology/Computer Science and I.T.

Elective – NUMERICAL METHODS

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Fit a straight line $y = a + bx$ into the given data. What is the value of y when $x = 8$?

x	:	1	2	3	4	5	6
y	:	20	21	22	23	24	25

(a) 27 (b) 26

(c) 28 (d) 37

2. The method of least squares finds the best fit line that _____ the error between observed and estimated points on the line.

   (a) Maximize

   (b) Minimize

   (c) Reduces to zero

   (d) Approaches to infinity

3. Which of the following transformations are allowed in the Gauss Jordan method?

   (a) Swapping a column

   (b) Swapping two rows

   (c) Swapping two columns

   (d) Swapping a row

4. In Newton Raphson method $f'(x)$ for a given point is given by the formula _____.

   (a) y/x' (b) y'/x

   (c) y/x (d) y'/x'

5. The convergence of which of the following method depends on initial assumed value?

   (a) False position

   (b) Gauss Seidel method

   (c) Newton Raphson method

   (d) Euler method

6. Find the root of $x^4 - x - 10 = 0$ approximately upto 5 iterations using Bisection Method. Let $a = 1.5$ and $b = 2$.

(a) 1.68 (b) 1.86

(c) 1.88 (d) 1.66

7. Rate of convergence of the Newton-Raphson method is generally ————————.

(a) Linear (b) Quadratic

(c) Super-linear (d) Cubic

8. The equation $f(x)$ is given as $x^3 - x^2 + 4x - 4 = 0$. Considering the initial approximation at $x = 2$ then the value of next approximation correct upto 2 decimal places is given as _____.

(a) 0.67 (b) 1.33

(c) 1.00 (d) 1.50

9. How many assumptions are there in Jacobi's method?

(a) 2 (b) 3

(c) 4 (d) 5

10. Division by zero during in Gaussian elimination of the set of equations $[A]*[X]=[C]$ signifies the coefficient matrix $[A]$ is _____.

(a) Invertible

(b) Non Singular

(c) Not determinable to be singular or non singular

(d) Singular

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Summarize the concept of curve fitting.

Or

(b) Fit a second degree parabola to the following data:

x :	0	1	2	3	4
y :	1	1.8	1.3	2	6.3

12. (a) Find a root of the equation $x^3 - 4x - 9 = 0$, using the bisection method correct to three decimal places.

Or

(b) Using Newton's iterative method, find the real root of $x \log_{10} x = 1.2$ correct to five decimal places.

13. (a) Using the Gauss elimination method, solve the equations: $x + 2y + 3z - u = 10$, $2x + 3y - 3z - u = 1$, $2x - y + 2z + 3u = 7$, $3x + 2y - 4z + 3u = 2$.

Or

(b) Using Gauss-Jordan method, find the inverse of the matrix $\begin{bmatrix} 1 & 1 & 2 \\ 1 & 3 & -3 \\ -2 & -4 & -4 \end{bmatrix}$.

14. (a) Write a note on trapezoidal rule.

Or

(b) Using Newton's backward difference formula. construct an interpolating polynomial of degree 3 for the data: $f(-0.75) = -0.0718125$, $f(-0.5) = -0.02475$, $f(-0.25) = 0.3349375$.

15. (a) Given $\frac{dy}{dx} = x^2(1+y)$ and $y(1) = 1$, $y(1.1) = 1.233$, $y(1.2) = 1.548$, $y(1.3) = 1.979$, evaluate $y(1.4)$ by the Adams–Bashforth method.

Or

(b) Mention the advantages of Runge-Kutta method.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain the fitting a straight line with example.

Or

(b) Fit a straight line to the following data:

x :	6	7	7	8	8	8	9	9	10
y :	5	5	4	5	4	3	4	3	3

17. (a) Using the bisection method, find an approximate root of the equation $\sin x = 1/x$, that lies between $x = 1$ and $x = 1.5$ (measured in radians). Carry out computations up to the 7^{th} stage.

Or

(b) Find a real root of the equation $x \log_{10} x = 1.2$ by Regula–Falsi method correct to four decimal places.

18. (a) Solve the equations $10x - 7y + 3z + 5u = 6$; $-6x + 8y - z - 4u = 5$; $3x + y + 4z + 11u = 2$; and $5x - 9y - 2z + 4u = 7$ by the Gauss–Jordan method.

Or

(b) Using .Jacobi's method, find all the eigen values and the eigenvectors of the matrix $\begin{bmatrix} 1 & \sqrt{2} & 2 \\ \sqrt{2} & 3 & \sqrt{2} \\ 2 & \sqrt{2} & 1 \end{bmatrix}$.

19. (a) Use the Trapezoidal rule to estimate the integral $\int_0^2 ex^2\,dx$ taking the number 10 intervals.

Or

(b) Use Simpson's 1/3rd rule to find $\int_0^{0.6} e^{-x^2}\,dx$ by taking seven ordinates.

20. (a) Apply the Runge–Kutta fourth order method to find an approximate value of y when $x = 0.2$ given that $dy/dx = x + y$ and $y = 1$ when $x = 0$.

Or

(b) Using Milne's method find $y(4.5)$ given $5xy' + y^2 - 2 = 0$ given $y(4) = 1$, $y(4.1) = 1.0049$, $y(4.2) = 1.0097$, $y(4.3) = 1.0143$; $y(4.4) = 1.0187$.

———————

(7 pages) **Reg. No. :** .....

Code No. : 10770 E **Sub. Code : EEIT 12/ EECT 12**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

First Semester

Information Technology/Computer Science and I.T.

Elective — DISCRETE MATHEMATICS

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. If x is a set and the set contains the real number between 1 and 2, then the set is ————————.

   (a) Empty set

   (b) Finite set

   (c) Infinite set

   (d) None of the mentioned

2. ———————— may exist between objects of the same set or between objects of two or more sets.

(a) Relations (b) Sets

(c) Graphs (d) Domains

3. Let $A = \{1, 2, 3\}$, $B = \{a, b, c\}$ and $f = \{(1, a), (2, b), (3, a)\}$. The range of f is ————————.

(a) $(1, 3)$ (b) $\{3, b\}$

(c) $\{a, b\}$ (d) (a, b)

4. Let f_1 and f_2 be two functions from A to R. Then $f_1 f_2$ is defined by

(a) $(f_1 f_2)\, x = f_1(x) f_2(x)$

(b) $(f_1 + f_2)x = f_1(x) + f_2(x)$

(c) $(f_1 f_2)x = f_1(x) + f_2(x)$

(d) $(f_1 + f_2)x = f_1(x) f_2(x)$

5. $\sim (p \vee q) \equiv \sim p \wedge \sim q$ is ———————— law.

(a) Demorgans law (b) Idempotent law

(c) Associative law (d) Distributive

6. A preparation $P(p, q)$ is called a ———— if it contains only F in the last column of its truth value.

(a) Tautology (b) Contradiction

(c) Contingency (d) None of the above

7. A square matrix in which every non-diagonal element is zero and all diagonal elements are equal is called a ———— matrix.

(a) Triangular (b) Scalar

(c) Diagonal (d) Unit

8. A square matrix A is known as Idempotent if, ————

(a) $A^2 = I$ (b) $A^n = 0$

(c) $A^2 = A$ (d) $AI = 1$

9. Any pair of nodes that is connected by an edge in a graph is called ———— nodes.

(a) Incident (b) Adjacent

(c) Isolated (d) Order

10. A graph is a collection of

(a) Rows and columns

(b) Vertices and edges

(c) Equations

(d) Values and symbols

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Let $A = \{1, 2, 3, 4\}$ and $B = \{3, 4, 5, 6\}$ Find the elements of each relation R stated below. Also, find the domain and range of R.

(i) aRb if and only if $a < b$

(ii) aRb if and only if a and b are both odd numbers.

Or

(b) Illustrate reflexive relation and symmetric relation with examples.

12. (a) Let $f : Z \to Z$ be a function defined by $f(x) = 2x + 3$

Let $g : Z \to Z$ be another function defined by $g(x) = 3x + 2$.

Determine the compositions $f \circ g$ and $g \circ f$.

Or

(b) Prove that the function $f(x) = x + 1$ from the set of integers to the set of integers onto.

13. (a) Explain the following logical operators with truth tables :

(i) conjunction

(ii) disjunction

Or

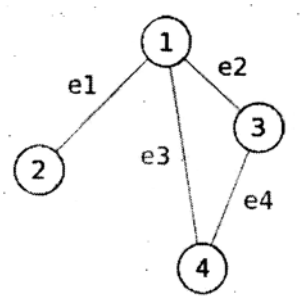
(b) Show that $p \wedge (q \vee r)$ is equivalent to $(p \wedge q) \vee (p \wedge r)$.

14. (a) Outline the step-by-step procedure for inverse of a matrix.

Or

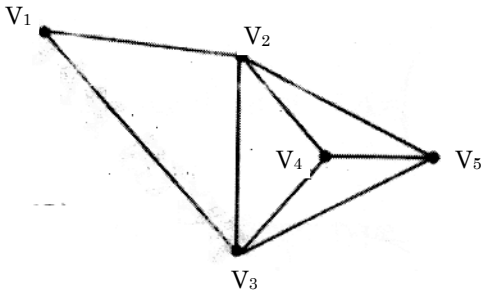
(b) Find the determinant of matrix $\begin{pmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{pmatrix}$.

15. (a) Write the incidence matrix of the graph G given in figure.



Or

(b) Draw any four sub-graphs of a given graph.



PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Elaborate on the two closure operations on relations with examples.

Or

(b) (i) Define inverse of relation with example.

(ii) Let $A = \{1, 2, 3\}$ and $R = \{(1, 2), (1, 3), (2, 3)\}$. Determine M_R.

17. (a) Show that the function $f(x) = x^3$ and $g(x) = x^{1/3}$ for all $x \in R$ are inverses of each other.

Or

(b) Let $f : R \to R$ be defined by $f(x) = 3x - 4$. Find a formula for f^1.

18. (a) Show that the following $(p \wedge \sim q) \vee \sim (p \wedge \sim q)$ is a tautology.

Or

(b) State and prove De-Morgan's law.

19. (a) If $A = \begin{pmatrix} 1 & 2 & -1 \\ 3 & 0 & 2 \\ 4 & 5 & 0 \end{pmatrix}$ and $B = \begin{pmatrix} 1 & 0 & 0 \\ 2 & 1 & 0 \\ 0 & 1 & 3 \end{pmatrix}$ show that $(AB)^T = B^T A^T$.

Or

(b) Demonstrate that the matrix $A = \begin{pmatrix} -5 & -8 & 0 \\ 3 & 5 & 0 \\ 1 & 2 & -1 \end{pmatrix}$ is involutory.

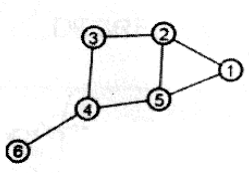
20. (a) Explain any three different types of graphs.

Or

(b) For the following graph G,

(i) Write the degree sequence of G.

(ii) Find the number of odd-degree vertices and the number of edges in the graph G.



(8 pages) **Reg. No. :** .....

Code No. : 10776 E **Sub. Code : ESIT 22/ ESCT 22**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Second Semester

Information Technology/Computer Science and I.T.

Skill Enhancement Course – QUANTITATIVE APTITUDE

(For those who joined in July 2003 onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. Find cube root of 6859.

   (a) 17 (b) 18

   (c) 19 (d) 20

2. Which one of the following is not a prime number?

   (a) 31 (b) 61

   (c) 71 (d) 91

3. Alfred buys an old scooter for Rs. 4,700 and spends Rs. 800 on its repairs. If he sells the scooter for Rs. 5,800, his gain percent is:

(a) 4 4/7% (b) 5 5/11%

(c) 10% (d) 12%

4. If a quarter kg of potato costs 60 paise, how many paise will 200gm cost?

(a) 48 paise (b) 54 paise

(c) 56 paise (d) 72 paise

5. A sum of money at simple interest amounts to Rs. 815 in 3 years and to Rs. 854 in 4 years. The sum is:

(a) Rs. 650 (b) Rs. 690

(c) Rs. 698 (d) Rs. 700

6. The diagonal of a rectangle is 41 cm and its area is 20 sq. cm. The perimeter of the rectangle must be:

(a) 9 cm (b) 18 cm

(c) 20 cm (d) 41 cm

7. The true discount on Rs. 2,562 due 4 months hence is Rs. 122. The rate percent is _____:

(a) 12% (b) 13 1/3%

(c) 15% (d) 14%

8. Find the odd man out:

3,5,11,14,17,21

(a) 21 (b) 17

(c) 14 (d) 3

9. In order to obtain an income of Rs. 650 from 10% stock at Rs. 96, one must make an investment of _____:

(a) Rs. 3,100 (b) Rs. 6,240

(c) Rs. 6,500 (d) Rs. 9,600

10. The angle between the minute hand and the hour hand of a clock when the time is 4.20, is _____:

(a) 0^o (b) 10^o

(c) 5^o (d) 20^o

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) The difference of two numbers is 1365. On dividing the larger number by the smaller, we get 6 as quotient and the 15 as remainder What is the smaller number?

Or

(b) The price of 2 sarees and 4 shirts is Rs. 1,600. With the same money one can buy 1 saree and 6 shirts. If one wants to buy 12 shirts, how much shall he have to pay?

12. (a) Sam is 16 years older than Peter. If 6 years back, Sam's age was 3 times Peter's age, what are their present age?

Or

(b) A dealer incurs a loss of 5% if he sells an article for Rs. 1,805. What price must he sell the article so as to gain 5 % on that article?

13. (a) A thief is noticed by a policeman from a distance of 200 m. The thief starts running and the policeman chases him. The thief and the policeman run at the rate of 10km and 11 km per hour respectively. What is the distance between them after 6 minutes?

Or

(b) Mr. Thomas invested an amount of Rs. 13,900 divided in two different schemes A and B at the simple interest rate of 14% p.a. and 11% p.a. respectively. If the total amount of simple interest earned in 2 years be Rs. 3,508, what was the amount invested in Scheme B?

14. (a) There are 5 women and 3 men applicants for a job. Only two out of eight are selected for a job. Find the probability that at least one of the selected person will be a women?

Or

(b) Insert the missing number.

7,26,63,124,215,342, (....)

15. (a) If Feb 12th, 1986 falls on Wednesday then Jan 1st , 1987 falls on which day?

Or

(b) A businessman buys 10 shares of Rs. 100 at 10 discount, and the rate of dividend is 30. Find the rate of interest.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) In a regular week, there are 5 working days and for each day, the working hours are 8. A man gets Rs. 2.40 per hour for regular work and Rs 3.20 per hours for overtime. If he earns Rs. 432 in 4 weeks, then how many hours does he work for?

Or

(b) The price of commodity X increases by 40 paise every year, while the price of commodity Y increases by 15 paise every year. If in 2001, the price of commodity X was Rs. 4.20 and that of Y was Rs. 6.30, in which year commodity X will cost 40 paise more than the commodity Y?

17. (a) A mixture contains sugar solution and colored water in the ratio of 4:3. If 10 liters of colored water is added to the mixture, the ratio becomes 4: 5. Find the initial quantity of sugar solution in the given mixture.

Or

(b) An industrial loom weaves 0.128 metres of cloth every second. Approximately, how many seconds will it take for the loom to weave 25 metres of cloth?

18. (a) Three pipes A, B, and C are connected to a tank. Out of the three, A and B are the inlet pipes and C is the outlet pipe. If opened separately, A fills the tank in 10 hours. B fills the tank in 12 hours and C empties the tank in 30 hours. If all three are opened simultaneously, how much time does it take to fill / empty the tank'?

Or

(b) A 10cm cube was divided into as n number of cubes of side length 1 cm cubes. Determine the total surface area ratio of the larger cube to the total surface areas of the smaller cubes.

19. (a) Two ships X and Y are sailing away from a glacier in the same direction. If the height of the glacier is 1000 m and the angle of elevation made by the 2 ships are 45 and 30 degree respectively, then what is the distance between the two ships?

Or

(b) If Rs. 10 be allowed as true discount on a bill of Rs. 110 at the end of a certain time , then the discount allowed on the same sum due at the end of double the time is?

20. (a) Study the following table carefully and answer the questions given below it:

Number of Different categories of vehicles sold in the country over the years (in thousands)

Year	Heavy	Light Commercial Vehicles	Cars	Jeep	Two Wheelers
1990	26	64	232	153	340
1991	45	60	242	172	336
1992	72	79	248	210	404
1993	81	93	280	241	411
1994	107	112	266	235	442
Total	331	408	1268	1011	1933

(i) In which of the following years was the number of light commercial vehicles sold approximately 25% of the number of 2-wheelers sold?

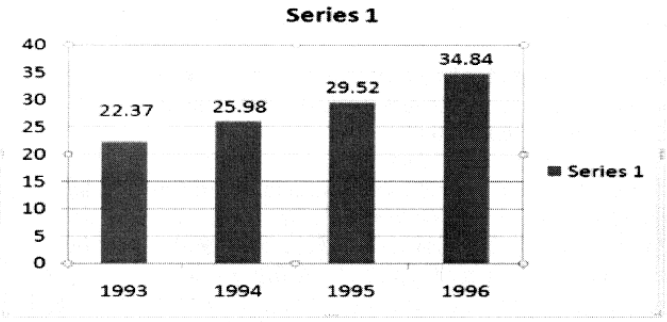
(ii) If the same percentage increase in the number of Heavy Vehicle as in 1994 over 1993 is expected in 1995, approximately how many heavy vehicles will be sold in 1995?

(iii) The number of Heavy Vehicles sold in 1993 was approximately what percent of the total number of Vehicles sold in 1992?

(iv) In which year was the number of 2-wheelers sold as a percentage of the total number of Vehicles sold during that year, the highest?

Or

(b) In the following graph, the increase in the wheat over years is shown. Based on this answer the questions below.



(i) How much does the wheat grow in 1994 as compared to the previous year?

(ii) What was an increase in the average rate of growth of wheat from 1993 to 1995?

(iii) How much percentage of growth of wheat was less in 1994 as compared to 1993?

(iv) What was the average of the total wheat, grew from 1995 to 1997?

———————

(6 pages) **Reg. No. :** .....

Code No. : 10777 E **Sub. Code : ESIT 23/ ESCT 23**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Second Semester

Information Technology/Computer Science and I.T.

Skill Enhancement Course – SOFTWARE TESTING

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. What is testing process first goal?

(a) Bug prevention (b) Testing

(c) Execution (d) Analyses

2. _____ Which term is used to define testing?

(a) evaluating deliverables to find errors

(b) find broken code

(c) stage in all projects

(d) exception handling

3. In a flow graph, node that contains a condition and is characterized by two or more edges emanating from it, is called as

(a) Parent node (b) Two Edge node

(c) Predicate node (d) None of the above

4. _____ instrumentation is what we have to do to confirm that the outcome was achieved by the intended path.

(a) path (b) graph

(c) predicate (d) None of the above

5. _____ testing is a software testing technique that involves selecting a small number of test cases from a nearly infinite group of candidate test cases.

(a) path (b) Domain

(c) interface (d) All of the above

6. Data flow Testing Strategies are _____

(a) path testing strategies

(b) structural strategies

(c) unstructured strategies

(d) none of the above

7. _____ are being an abstract representation of programs.

(a) Flow graphs (b) path

(c) Domain (d) interface

8. The _____ sign was used to denote the fact that path names were part of the same set of paths

(a) "/" (b) "+"

(c) + (d) "v"

9. Which of the following is not a white box technique?

(a) State transition testing

(b) Path testing

(c) Statement testing

(d) Data flow testing

10. The Decision table testing is a

(a) White box Test Design Technique

(b) Black Box Test Design Technique

(c) Experience-based Test Design Technique

(d) Grey Box Test Design Technique

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Summarize purpose of testing.

Or

(b) Write note on importance of bugs.

12. (a) Discuss about Get the transaction flow in testing technique.

Or

(b) Describe about

(i) Link markers

(ii) Link counters

13. (a) Mention the terminologies of data flow.

Or

(b) Express about slicing and dicing.

14. (a) Write note on identity elements of path products.

Or

(b) Discuss about test case design.

15. (a) What are the definitions and notations of decision tables?

Or

(b) Describe about Limitations and extensions of state testing.

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain in detail model for testing.

Or

(b) What are the types bugs? Explain.

17. (a) Write note on inspection, reviews, walkthroughs.

Or

(b) Elaborate

(i) path predicate expressions

(ii) predicate coverage

18. (a) Explain data flow testing strategies.

Or

(b) Summarize

(i) Closure compatibility

(ii) Bug Assumption

19. (a) Write about linguistic metrics.

Or

(b) Explain what, why, and how syntax testing.

20. (a) Illustrate state graphs.

Or

(b) Explain about Impact of bugs in state testing.

———————

(6 pages) **Reg. No. :** .....

Code No.: 10780 E **Sub. Code: EMCT 11**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024.

First Semester

Computer Science and Information Technology – Core

OBJECT ORIENTED PROGRAMMING USING C++

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer:

1. Which concept allows you to reuse the written code?

   (a) Encapsulation

   (b) Abstraction

   (c) Inheritance

   (d) Polymorphism

2. Which UML diagram is used to represent the static structure of a system, including classes and their relationships?

(a) Use Case Diagram (b) Sequence Diagram

(c) Class Diagram (d) Activity Diagram

3. What is the purpose of an inline function in C++?

(a) To reduce code redundancy

(b) To declare a function

(c) To create a recursive function

(d) To return a reference

4. Which of the following is the correct way to declare a break statement?

(a) break; (b) break();

(c) break_statement; (d) break-statement;

5. How many parameters does a default constructor require?

(a) 1 (b) 2

(c) 0 (d) 3

6. Which of the following operator can be overloaded?

(a) ?: (b) ::

(c) . (d) ==

7. Which concept of OOPs is shown by Virtual Functions?

(a) Inheritance (b) Encapsulation

(c) Polymorphism (d) Abstraction

8. Which symbol is used to create multiple inheritances?

(a) Dot (b) Comma

(c) Dollar (d) Star

9. Which part of the try-catch block is always fully executed?

(a) try part (b) catch part

(c) finally part (d) throw part

10. Which of the following is used for generic programming?

(a) Virtual functions

(b) Modules

(c) Templates

(d) Abstract Classes

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Bring out the various applications of Object Oriented Programming.

Or

(b) Discuss about popular Object Oriented Programming languages.

12. (a) Explain about call by reference with example.

Or

(b) Write a C++ program to check whether the number is odd or even.

13. (a) Interpret the concept of parameterized constructor.

Or

(b) List out the importance of destructor.

14. (a) How do you define an abstract class in C++? Discuss.

Or

(b) Write the purpose of pure virtual function with an example.

15. (a) Why are exception used in C++? Discuss.

Or

(b) Explain the two types of templates.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Differentiate between Procedure Oriented Programming and Object Oriented Programming.

Or

(b) Define UML. How it is used in Object Oriented Programming Design? Explain.

17. (a) Explain *while* and *do while* statement with example.

Or

(b) Discuss about classes and objects with an example.

18. (a) Write a C++ program to demonstrate operator overloading.

Or

(b) Elaborate note on type conversion.

19. (a) Analyze the role of multiple inheritance in C++.

Or

(b) Illustrate the concepts of pointers to object in C++.

20. (a) Explain the different ways to use templates in C++.

Or

(b) Differentiate between standard exception and user defined exception.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10782 E **Sub. Code : EECT 22**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024.

Second Semester

Computer Science and Information Technology

Elective – TRENDS IN COMPUTING

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)
Answer ALL questions.

Choose the correct answer :

1. What type of computing technology refers to services and applications that typically run on a distributed network through virtualized resources?

   (a) Distributed Computing

   (b) Cloud Computing

   (c) Soft Computing

   (d) Parallel Computing

2. Which one of the following options can be considered as the Cloud?

(a) Hadoop (b) Intranet

(c) Web Application (d) Real

3. Which of the following is not a medium of transmission?

(a) Microwave system (b) Wire

(c) Free space (d) Fiber optic cable

4. Which of the following is the Cloud Platform provided by Amazon?

(a) AWS (b) Cloudera

(c) Azure (d) Local

5. What is edge computing?

(a) It is a blockchain technology

(b) It is a type of computing

(c) It is a distributed Information technology

(d) Duplexing

6. Which of the following is an example of Edge Computing?

(a) Internet of Things

(b) Blockchain Technology

(c) Machine Learning

(d) Deep Learning

7. _____ is one of the fastest growing components of waste stream in the world.

(a) e-learning (b) e-shopping

(c) e-waste (d) Use of Internet

8. _____ is achieved using specialized software which creates partitions of a server into smaller virtual servers to maximize server resources.

(a) Virtualization (b) Socialization

(c) Communication (d) Transmission

9. Fog computing can be perceived in _____ and _____

(a) Big data and Cloud systems

(b) Big data and IoT

(c) Cloud systems and IoT

(d) Big data, Cloud systems and IoT

10. Fog computing has _____ and _____ plane.

(a) Control and data (b) Control and Barcode

(c) Barcode and Data (d) Data and cloud

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Examine in detail about Advantages of Cloud Computing with examples.

Or

(b) Analyze in detail about Types of Cloud Computing with neat diagram.

12. (a) Discuss in detail Software as a Service with example.

Or

(b) Write short notes on Platform as a Service with example.

13. (a) Enumerate in detail about Edge Computing Architecture with neat diagram.

Or

(b) Elucidate in detail about Advantages and Limitations of Edge Computing Systems with example.

14. (a) Illustrate in detail about Edge-Based Attack Decision with example.

Or

(b) Illuminate in brief about Prevention Edge Computing with example.

15. (a) Discuss in detail about difference between Fog Computing and Edge Computing with example.

Or

(b) Clear Up in detail about Fog Computing Advantages and Limitations of Fog Computing with example.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Paraphrase in detail about different Cloud Services with neat diagram.

Or

(b) Translate in brief about Limitations of Cloud with example.

17. (a) Summarize in detail about Infrastructure as a Service with example.

Or

(b) Characterize in brief about Database as a Service with example.

18. (a) Illuminate in detail about the Edge Data Analytics with example.

Or

(b) Paraphrase in detail about Potential of Edge Analytics with example.

19. (a) Point out in detail about Edge Computing Use Cases with example.

Or

(b) Clear up in brief about Edge Computing High Potential Use Cases with example.

20. (a) Elucidate in detail about the Characteristics of Fog Computing with example.

Or

(b) Enumerate in brief about Challenges to Fog Based Cloud Computing with example.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10783 E **Sub. Code : ESCT 11**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024

First Semester

Computer Science and Information Technology

Skill Enhancement Course – OFFICE AUTOMATION

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which of the following is the brain of the computer?
   (a) Central Processing Unit
   (b) Memory
   (c) Arithmetic and Logic unit
   (d) Control unit

2. Which of the following is the smallest unit of data in a computer?

(a) Bit (b) KB

(c) Nibble (d) Byte

3. ———————— cannot be used to work in MS Office.

(a) Joystick (b) Scanner

(c) Light Pen (d) Mouse

4. The ———————— works with the standard Copy and Paste commands.

(a) View tab

(b) Paragraph dialog box

(c) Office Clipboard

(d) All of the above

5. Excel is a ———————— program developed by Microsoft.

(a) Spreadsheet (b) Document

(c) Data management (d) All of the above

6. What is the collection of worksheets called?

(a) Ledger (b) Book

(c) Test hook (d) Workbook

7. What is DBMS?

(a) DBMS is a collection of queries

(b) DBMS is a high-level language

(c) DBMS is a programming language

(d) DBMS stores, modifies and retrieves data

8. Which type of data can be stored in the database?

(a) Image oriented data

(b) Text, files containing data

(c) Data in the form of audio or video

(d) All of the above

9. In the current presentation, if we want to insert a new slide, we can choose which of these?

(a) Ctrl + F (b) Ctrl + O

(c) Ctrl + M (d) Ctrl + N

10. Which of these refers to the PowerPoint view used for displaying only the text (title and bullets)?

(a) Slide sorter show (b) Slide view

(c) Outline view (d) Notes page view

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) What are the difference between monitor and printer? Explain.

Or

(b) Describe the silent features of DOS.

12. (a) How will you editing text in word document? Explain.

Or

(b) Summarize the formatting text information in MS Word.

13. (a) How will you entering text and data in spreadsheets? Explain.

Or

(b) Point out the introduction to data analytics.

14. (a) Explain the steps to searching records in databases with example.

Or

(b) Analysis the need to linking of data files in databases.

15. (a) Bring out the features of MS PowerPoint.

Or

(b) Elaborate the understanding slide type casting and viewing slides.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Examine the main purpose of scanner device.

Or

(b) Determine the different types of programming language.

17. (a) Outline the steps to mail merge in word document.

Or

(b) Illustrate the purpose of printing and preview in MS Word.

18. (a) How will you create a charts in spreadsheets? Give example.

Or

(b) Elaborate the importance of analysis tables in spreadsheets.

19. (a) Discuss the understanding programming environment in DBMS.

Or

(b) Analysis the steps to generate the report from databases.

20. (a) Demonstrate the steps to apply special objects and images in slide show.

Or

(b) Elucidate the need to slide transition in slide show of presentation.

———————

(6 pages)

Reg. No. : .....

Code No. : 10784 E **Sub. Code : ESCT 21**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Second Semester

Computer Science and Information Technology

Skill Enhancement Course – ADVANCED EXCEL

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL the questions.

Choose the correct answer :

1. Which of the following functions is used to calculate the variance of a range of cells in Excel?
   (a) Variance (b) VAR
   (c) STDEV (d) AVERAGE

2. What is the shortcut key to switch between absolute, relative and mixed cell reference in a formula?
   (a) F4 (b) F5
   (c) F6 (d) F7

3. Which of the following chart types is used to display trends over time?

(a) Line chart (b) Bar chart

(c) Pie chart (d) Scatter chart

4. Which of the following functions is used to round a number to a specified number of decimal places?

(a) ROUNDUP (b) ROUNDDOWN

(c) ROUND (d) TRUNC

5. What is the shortcut key to display the "Format cells" dialog box in Excel?

(a) Ctrl+1 (b) Ctrl+2

(c) Ctrl+3 (d) Ctrl+4

6. What is the shortcut key to insert a new column in an Excel worksheet?

(a) Ctrl+C (b) Alt+C

(c) Shift+C (d) Ctrl+Shift+C

7. Which Excel feature allows you to filter data based on specified criteria?

(a) Conditional Formatting

(b) Data validation

(c) Sorting

(d) Autofilter

8. The first step in creating a pivot table is ————

(a) Clicking on the insert Tab and inserting a pivot table

(b) Select data that needs to be analyzed

(c) Deciding on which fields to use to analyze the data.

(d) None of the above

9. Which type of chart uses horizontal bars?

(a) Column chart (b) Line chart

(c) Pie chart (d) Bar chart

10. What will be the value of the following MS-Excel formula? = AVERAGE (5,4,4,3,6)

(a) 5 (b) 3.72

(c) 4.4 (d) ERROR

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) What are the basic Excel formulas?

Or

(b) What is VLOOKUP in Excel? Explain.

12. (a) What are the three types of data validation in Excel?

Or

(b) How to make reports in Excel?

13. (a) What are some ways to rearrange data within a pivot table?

Or

(b) Which of the Pivot Table form displays subtotals at the top of each?

14. (a) What are the text functions available in Excel?

Or

(b) How to create Data table in Excel?

15. (a) How to plot 3D Graphs in Excel?

Or

(b) Write any three features of Excel sparkline.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Explain the following

(i) conditional expressions

(ii) logical functions

Or

(b) What are the three types of cell references in Excel? Explain with example.

17. (a) What is template? How to design the structure of the template?

Or

(b) What is sorting and filtering in Excel? Explain.

18. (a) What is data consolidation in Excel? How to use data consolidation feature in excel?

Or

(b) How to add grand total and sub total in pivot table? Explain with example.

19. (a) How to format worksheet using

(i) Conditional formatting

(ii) Auto formatting

Or

(b) What is meant by database function? What are the database functions available in excel.

20. (a) What is chart? How will you insert a chart in Excel?

Or

(b) How will you share chart with (i) Power point (ii) Ms word

———————

(6 pages)

Reg. No. : .....

Code No. : 10785 E **Sub. Code : ESCT 24**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024

Second Semester

Computer Science and Information Technology

Skill Enhancement Course – PROBLEM SOLVING TECHNIQUES

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Arrange the stages of the problem–solving process in the correct order

(A) Identifying the problem

(B) Generating potential solutions

(C) Implementing the chosen solution

(D) Evaluating the outcomes

(E) Analyzing the available information

Choose the correct answer from the options given below

(a) ABCDE (b) EABCD

(c) AEBCD (d) EABDC

2. ———————— is used to show the processing that takes place in the flow chart?

(a) Diamond (b) Ellipse

(c) Arrows (d) Rectangle

3. What is the decimal equivalent of $(0.1101)_2$?

(a) $(0.0625)_{10}$ (b) $(0.8125)_{10}$

(c) $(0.5)_{10}$ (d) $(0.25)_{10}$

4. The minimum number of comparison required to determine if an integer appears more than n/2 times in a sorted array of n integers is

(a) $\theta(n)$ (b) $\theta(\log n)$

(c) $\theta(n \log n)$ (d) $\theta(1)$

5. Standard planning algorithms assume environmental to be ————————

(a) Both deterministic and fully observable

(b) Neither deterministic nor fully observable

(c) Deterministic but not fully observable

(d) Not deterministic but fully observable

6. Number of comparisons required for an unsuccessful search of an element in a sequential search, organized, fixed length, symbol table of length L is ————————

(a) L (b) L/2

(c) (L+1)/2 (d) 2L

7. Representation of data structure in memory is known as ————————

(a) Storage structure

(b) File structure

(c) Recursive

(d) Abstract data type

8. The main measures of the efficiency of an algorithm are ————————

(a) Time and Space complexity

(b) Data and space

(c) Processor and memory

(d) Complexity and capacity

9. An algorithm is ————————

(a) A problem

(b) A procedure for solving a problem

(c) A real – life mathematical problem

(d) None of the above

10. In Tower of Hanoi, the minimum number of moves can be calculated by solving the recurrence relation T(n) = ————————

(a) 2T (n–1)+C (b) T(n–1)

(c) 2+T(n–1) (d) T(n–1)+C

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) What is the concept of algorithms and programs?

Or

(b) What are the steps to solve problem in Computer?

12. (a) What is an algorithm to exchange the values of two variables?

Or

(b) What are the three rules of counting?

13. (a) How do you calculate the square root of a num?

Or

(b) Write an algorithm to find the smallest divisor of an integer.

14. (a) Explain the algorithm for array order reversal.

Or

(b) How do you find the maximum value of a data set?

15. (a) What is the justification method of text?

Or

(b) How do you identify keywords in text?

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) What are the steps of algorithms problem solving?

Or

(b) Explain Recursive problem solving with example.

17. (a) What is factorial? How to calculate factorials? Explain with example.

Or

(b) Write an algorithm for sine function computation.

18. (a) How do you raise a number to a large power? Explain with algorithm.

Or

(b) How to write the algorithm for computing the n^{th} Fibonacci number? Explain with example.

19. (a) How do you remove duplicates from sorted array? Explain with example.

Or

(b) How to find the K^{th} smallest element in array? Explain

20. (a) Explain text line Length adjustment algorithm with example.

Or

(b) What is the most effective algorithms for generating permutations. Explain it.

———————

(6 pages) **Reg. No. :** .....

Code No. : 10786 E **Sub. Code : EFCT 11**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024

First Semester

Computer Science and Information Technology

Foundation Course – FUNDAMENTALS OF INFORMATION TECHNOLOGY

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which of the following is the first generation of computers?

   (a) Vacuum tubes

   (b) Transistors

   (c) Integrated circuits (ICs)

   (d) Microprocessors

2. Which type of computer is designed for individual use?

   (a) Personal computer

   (b) Workstation

   (c) Minicomputer

   (d) Mainframe

3. Which of the following is a type of output device?

   (a) Monitor (b) Printer

   (c) Speakers (d) All of the above

4. What type of input device allows users to convert paper documents into digital images?

   (a) Scanner (b) Printer

   (c) Plotter (d) None of the above

5. Which of the following is a type of Secondary Storage?

   (a) RAM (b) ROM

   (c) Magnetic Disk (d) EPROM

6. Which storage device uses magnetized tracks or planers to store data?

   (a) Flash Drive (b) Optical Disk

   (c) Magnetic Disk (d) Zip Drive

7. Which programming language is closest to the computer's native binary language?

   (a) Machine Language

   (b) Assembly Language

   (c) High-Level Language

   (d) JavaScript

8. Which type of software is essential for managing and organizing data in a structured manner?

   (a) System Software

   (b) Utility Software

   (c) Application Software

   (d) Programming Language

9. Which operating system type allows multiple programs to run concurrently, each in its own time slice?

   (a) Batch Processing

   (b) Multiprogramming

   (c) Multi-Tasking

   (d) Multiprocessing

10. Which of the following operating system types allows multiple users to interact with the system simultaneously?

(a) DOS

(b) Windows

(c) Time Sharing

(d) Multiprogramming

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write about computer and its key characteristics.

Or

(b) State the limitations associated with computer technology.

12. (a) Explain scanner and its types.

Or

(b) Differentiate impact and non impact printers.

13. (a) Elaborate note on Random Access Memory.

Or

(b) Explain the purpose of zip drive.

14. (a) Describe the system software with an example.

Or

(b) Write about utility program with example.

15. (a) Differentiate between compiler and interpreter.

Or

(b) Explain batch processing and its benefits.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Classify the generations of computers.

Or

(b) Explain the various applications of computer.

17. (a) Describe the different types of output devices and their functions.

Or

(b) Explain the following.

(i) Voice Recognition

(ii) Touch Screen

18. (a) Illustrate the concepts of data retrieval methods and their importance.

Or

(b) Interpret the data storage methods in computer.

19. (a) Describe the application software and its types.

Or

(b) Explain the three levels of programming languages.

20. (a) Classify the different types of translators.

Or

(b) Describe the functions of operating system.

———————