Reg. No. : ....

ode No. : 30586 E   Sub. Code : AACS 41

(CBCS) DEGREE EXAMINATION, APRIL 2022

Fourth Semester

Computer Science — Allied

MACHINE LEARNING

(For those who joined in July 2020 onwards)

: Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

Machine learning is a subset of which of the following ————

(a) Deep learning

(b) Data learning

(c) Artificial intelligence

(d) None

2. Which of the following is the best machine learning method?

(a) Scalable   (b) Accuracy

(c) Fast   (d) All the above

3. Identify the type of learning in which labled training data is used ———— learning.

(a) Semi unsupervised

(b) Unsupervised

(c) Reinforcement

(d) Supervised

4. Following are the types of supervised learning ————

(a) Classification   (b) Regression

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

5. Identify the successful applications of machine language ————

(a) Learning to classify new astronomical structures

(b) Learning to recognize spoken words

(c) Learning to drive an autonomous vehicle

(d) All the above

KNN stands for ————

(a) K-Nearest Neighbor

(b) K-Network Neighbor

(c) K-Nonlinear Network

(d) None

———— classifier is one of the simple and most effective classification algorithms which helps in building the fast machine learning models that can make quick predictions.

(a) Logistic regression

(b) Naïve bayes

(c) Both (a) and (b)

(d) None

———— are a type of supervised machine learning where the data is continuously split according to a certain parameter.

(a) Decision tree   (b) AI

(c) KNN   (d) None

Clustering is a ———— learning method.

(a) Supervised   (b) Unsupervised

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

10. ———— can work with raw, structure and unstructured data.

(a) Machine learning (b) Data science

(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) Write short note on Pandas data frame.

Or

(b) What do you mean by artificial intelligence?

12. (a) What is gradient descent optimization?

Or

(b) Give a brief note on classification algorithm.

13. (a) What is data normalization?

Or

(b) List out the popular algorithms available in machine learning.

14. (a) What is decision tree algorithm?

Or

(b) Differentiate heuristic for rule learning versus decision trees.

15. (a) Where is machine learning used in data science?

Or

(b) List out the difference between K-mean and KNN.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) What is the use of Matplotlib is machine learning? Explain.

Or

(b) What is machine learning? Explain it in detail.

17. (a) Discuss in detail about linear regression and logistic regression.

Or

(b) What is supervised learning? What do you mean by test data and training data?

18. (a) What is SVM and how it works?

Or

(b) How does K-nearest neighbor algorithm work?

19. (a) Explain Naïve Bayes algorithm in detail.

Or

(b) What is classification algorithm? Explain any one of the classification algorithm.

20. (a) Discuss in detail about ethical, moral issues and challenges.

Or

(b) What is K-means clustering? Give a brief note on it.

———————

Reg. No. : ....

Code No. : 20322 E   Sub. Code : AACS 41

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Fourth Semester

Computer Science — Allied

MACHINE LEARNING

(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. Identify the successful applications of Machine Language ——————

    (a) Learning to classify new astronomical structures

    (b) Learning to recognize spoken words

    (c) Learning to drive an autonomous vehicle

    (d) All the above

2. Analysis of machine learning algorithm needs ——————

    (a) Statistical Learning Theory

    (b) Computational Learning Theory

    (c) Both (a) and (b)

    (d) None

3. Linear regression is a machine learning algorithm based on —————— learning.

    (a) Reinforcement

    (b) Un supervised

    (c) Supervised

    (d) None

4. —————— data is the data we use to train an algorithm or machine learning model to predict the outcome we design our model to predict.

    (a) Test   (b) Train

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

5. Identify the difficulties with the K-Nearest Neighbor algorithm ——————

    (a) Curse of Dimensionality

    (b) Calculate the distance of the test case formal training cases

    (c) Both (a) and (b)

    (d) None

6. The objective of applying ——————, to find the best line in two dimensions or the best hyperplane in more the two dimensions in order to help us separate our space into classes.

   (a) SVM

   (b) K-Means clustering

   (c) Both (a) and (b)

   (d) None

7. Which one of the following performs well in multiclass prediction ——————

   (a) Logistic Regression

   (b) Naive Bayes Classifier

   (c) Both (a) and (b)

   (d) None

8. The decision tree can be explained using the entities ——————

   (a) Nodes   (b) Leaves

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

9. —————— are two types of unsupervised learning

   (a) clustering   (b) Association

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

10. K-means clustering algorithm is used to solve the clustering problems in ——————

    (a) Machine Learning

    (b) Data Science

    (c) Either (a) or (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 is Machine Language?

       Or

    (b) Is Matplotlib used in Machine language?

12. (a) What is Supervised Learning?

       Or

    (b) Differentiate: Test Data Versus Training Data.

13. (a) What is Support Vector Machine?

       Or

    (b) What are the popular algorithms available in machine learning?

14. (a) What are the advantages of Naive Bays algorithm?

Or

(b) What is the difference between heuristic for rule learning and heuristics for decision trees?

15. (a) Differentiate K-Means and KNN.

Or

(b) List out the Ethical and Moral issues available in Machine Learning.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) What is Data vizualization in Machine language? Why is it important?

Or

(b) Expand and explain about AI.

17. (a) Discuss in detail about Gradient Descent optimization.

Or

(b) Explain Linear Regression and Logistic Regression in detail.

18. (a) How does K - Nearest Neighbor algorithm work?

Or

(b) Why is data normalization used in Machine Learning?

19. (a) Explain Decision Tree algorithm in detail.

Or

(b) What is classification algorithm? List out and explain any one algorithm in detail.

20. (a) What do you mean by clustering? Explain it in detail.

Or

(b) Compare Machine Learning and Data Science.

———

Reg. No. : ....

ᴏde No. : **30583 E**   Sub. Code : **AMCS 41**

ᴊc. (CBCS) DEGREE EXAMINATION, APRIL 2022

Fourth Semester

Computer Science — Core

DATA STRUCTURES

(For those who joined in July 2020 onwards)

ᴊe : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

The efficiency of a sequential search is ——————

(a) O(n)   (b) O(n*n)

(c) O(log2n)   (d) O(n*n*n)

In —————— hashing, the key is squared and the address is selected from the middle of the result.

(a) Direct   (b) Mid square

(c) Subtraction   (d) Digit extraction

3. A —————— list is a linked list with two or more logical lists.

(a) Circular   (b) Double linked

(c) Multi linked (d) Single linked

4. —————— a linked list means going through the list, node by node and processing each node.

(a) Search   (b) Insert

(c) Delete   (d) Traversing

5. —————— is an ordered list in which all insertions and deletions are made at one end called top.

(a) Queue   (b) Trees

(c) Graphs   (d) Stack

6. Which data structure allows deleting data elements from front and inserting at rear?

(a) Stacks   (b) Queues

(c) Dequeue   (d) Binary search tree

7. With —————— traversal, before visiting the root node, left sub-tree of the root node is to be visited then root node and after the visit of the root node right sub-tree of the root node will be visited.

(a) preorder   (b) inorder

(c) postorder   (d) both (a) and (c)

An —————— is a binary tree which stores an arithmetic expression.

(a) Heap tree   (b) Huffman tree

(c) Expression tree (d) Decision tree

A graph if it does not have any self loop or parallel edges is called —————— graph.

(a) simple   (b) complete

(c) weighted   (d) connected

A graph is said to be —————— if each vertex V_i is adjacent to every other vertex V_j in G.

(a) simple   (b) complete

(c) weighted   (d) connected

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

a) What is algorithm? What are the characteristics of a good algorithm?

Or

b) Describe the various levels of data abstraction.

12. (a) Elaborate the basic operations on stack.

Or

(b) How do you create a singly linked list in data structure? Explain.

13. (a) What is a binary tree? Explain the various representations of binary tree.

Or

(b) Write a procedure for insertion into a max heap.

14. (a) Write an algorithm for all pairs shortest paths.

Or

(b) Explain the concept of graph abstract data type.

15. (a) Summarize the insertion sort algorithm with example.

Or

(b) List out the advantages of external sorts.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Compare the space complexity and time complexity.

Or

(b) Illustrate they array as an abstract data type.

17. (a) Write a procedure to add and delete· an element to a stack.

Or

(b) What is a queue? Explain the various operations performed on a queue.

18. (a) Write an algorithm to delete a particular node from binary search tree.

Or

(b) Explain the algorithm for preorder traversal of a binary tree.

Page 5   **Code No. : 30583 E**

19. (a) Compare the depth first search and breadth first search.

Or

(b) Outline the concept of minimum cost spanning trees.

20. (a) Discuss the balanced two-way merge sort with example.

Or

(b) What are the different types of hash function? Explain.

_____

Page 6   **Code No. : 30583 E**

Reg. No. : ....

Code No. : 20317 E   Sub. Code : AMCS 41

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Fourth Semester

Computer Science — Core

DATA STRUCTURES

(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. A ————— is a collection of objects and a set of operations that act on those object.

    (a) Variable   (b) Constant

    (c) Datatype   (d) None

2. The ————— complexity of a program is the amount of memory that it needs to run to completion.

    (a) space   (b) time

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

3. ————— is a pile in which items are added at one end and removed from other end.

    (a) Stack   (b) Queue

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

4. How to represent the infix notation a*b|c into its postfix notation?

    (a) abc*/   (b) abc/*

    (c) */abc   (d) ab*c/

5. What are the operations will be done on Binary tree?

    (a) copying binary trees

    (b) testing equality

    (c) the satisfiability problem

    (d) all the above

6. ————— are frequently used to implement priority queues.

    (a) AVL tree   (b) Heaps

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

7. A graph with weighted edges is called —————

    (a) Subgraph   (b) Multigraph

    (c) Network   (d) None

8. BFS stands for —————

    (a) Breadth First Search

    (b) Breadth Frequent Search

    (c) Binary First Search

    (d) None

9. ————— : time until the right sector of the track is under the read/write head.

    (a) Seek time   (b) Latency time

    (c) Transmission time (d) None

10. Arranging the numbers in order is called —————

    (a) searching   (b) traversing

    (c) sorting   (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 do you mean by recursive algorithm?

    Or

    (b) Define and give a brief note on array in C.

12. (a) Give a brief note on stack and queue.

    Or

    (b) How to represent chains in 'C'?

13. (a) What is binary search tree?

    Or

    (b) How to transform a forest into a binary tree?

14. (a) Expand and explain DFS.

    Or

    (b) List out the observation of generating the paths in non decreasing order of length.

15. (a) Write a code for quick sort.

    Or

    (b) What is hash function? Give a note on division in hash function.

[P.T.O.]

PART C — (5 × 8 = 40 marks)

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

16. (a) What is data abstraction? Explain it in detail.

Or

(b) What is polynomial? How do you represent and add polynomial?

17. (a) How to evaluate an expression? Describe an algorithm for infix to postfix expression.

Or

(b) How to represent sparse matrix? Explain.

18. (a) What is binary tree traversal? Explain inorder and post order traversal in detail.

Or

(b) Explain in detail about heaps.

19. (a) What do you mean by graph? How to represent graph?

Or

(b) What is the use of Kruskal's algorithm? Explain with an example.

20. (a) What is sorting? Explain merge sort in detail.

Or

(b) Explain Hash tables in static hashing in detail.

Page 5   Code No. : 20317 E

Page 6   Code No. : 20317 E

Reg. No. : ....

Code No. : 20318 E   Sub. Code : AMCS 42

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

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. ——————— is concerned with the way the hardware components operate to form computer system.

   (a) Computer organization

   (b) Computer design

   (c) Computer architecture

   (d) Computer implementation

2. The ——————— input in the register determines the action to be taken with each clock pulse.

   (a) buffer   (b) register

   (c) load   (d) zero

3. The register that keeps track of the instructions in the program stored in memory is ———————

   (a) control register   (b) program register

   (c) status register   (d) direct register

4. The stack operation of insertion is called ———————

   (a) push   (b) pop

   (c) load   (d) move

5. In addition algorithm, the signs of A and B are ———————

   (a) identical   (b) different

   (c) dissimilar   (d) asymmetry

6. The addressing mode the operands are in registers that reside within CPU is ———————

   (a) register mode

   (b) register indirect mode

   (c) implied mode

   (d) indexed addressing mode

7. ——————— requires a sequence of add and shift micro operations.

   (a) Booth multiplication algorithm

   (b) Hardware multiplication algorithm

   (c) Array multiplier

   (d) Partial reminder

8. ——————— is used to eliminate the speed mismatch between processor and IO devices.

   (a) IO interface   (b) Priority

   (c) Daisy chain   (d) Interrupt

9. The average time required to reach a storage location in memory and obtain its contents is called the

   (a) seek time   (b) turnaround time

   (c) access time   (d) transfer time

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

    (a) Cache memory   (b) Secondary memory

    (c) Registers   (d) RAM

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 basic computer registers and memory with diagram.

    Or

    (b) Describe the control unit of basic computer.

12. (a) Differentiate between push operation and POP operation in a stack.

    Or

    (b) Write down the register with common ALU.

13. (a) Point out the flowchart of the hardware multiply algorithm.

    Or

    (b) Explain the booth algorithm for multiplication of signed 2's complement numbers.

14. (a) Elaborate the I/O bus and interface modules.

    Or

    (b) Write a note on asynchronous serial transfer.

15. (a) Differentiate between the functions of RAM and ROM.

Or

(b) What are the types of auxiliary memory devices? Explain.

PART C — (5 × 8 = 40 marks)

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

16. (a) Draw and explain the direct and indirect address in instruction codes.

Or

(b) What are the phases of instruction cycle? Explain.

17. (a) Discuss the various operations of data transfer instructions.

Or

(b) Outline the typical program control instructions with example.

18. (a) Evaluate the hardware implementation of addition algorithm.

Or

(b) Determine the multiplication of floating point numbers with diagram.

19. (a) Illustrate the block diagram of a typical asynchronous communication interface.

Or

(b) Summarize the method of daisy-chaining priority.

20. (a) Outline the implementation of the address mapping using pages in virtual memory.

Or

(b) Explain in detail the different mappings used for cache memory.

———————

Reg. No. : ....

Code No. : 20319 E   Sub. Code : AMCS 51

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Fifth Semester

Computer Science — Core

RELATIONAL DATABASE MANAGEMENT SYSTEM

(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. The output of the DDL is placed in the data dictionary, which contains ————

    (a) Query   (b) Transaction

    (c) Metadata   (d) Log

2. User which interact with the system using database query language is called as

    (a) Sophisticated User

    (b) Naive User

    (c) Database Administrator

    (d) Application Programmer

3. Database ———— which is the logical design of the database, and the database ———— which is a snapshot of the data in the database at a given instant in time

    (a) Instance, Schema

    (b) Schema, Instance

    (c) Relation, Schema

    (d) Relation, Domain

4. A ———— is a set of one or more attributes that, taken collectively, allow us to identify uniquely a tuple in the relation.

    (a) Super Key   (b) Primary Key

    (c) Foreign Key   (d) Candidate Key

5. The ———— clause is a list of the relations to be accessed in the evaluation of the query.

    (a) Select   (b) Where

    (c) From   (d) Order by

6. Which of the following is not a built in aggregate function in SQL?

    (a) avg   (b) max

    (c) count   (d) total

7. Which of the following gives a logical structure of the database graphically?

    (a) Entity-relationship diagram

    (b) Entity diagram

    (c) Database diagram

    (d) Architectural representation

8. Tables in second normal form (2NF) :

    (a) Eliminate all hidden dependencies

    (b) Eliminate the possibility of a insertion anomalies

    (c) Have all non-key

    (d) Have a composite key fields depend on the whole primary key

9. How can you change "Thomas" into "Michel" in the "LastName" column in the Users table?

    (a) UPDATE User SET LastName = 'Thomas' INTO LastName = 'Michel'

    (b) MODIFY Users SET LastName = 'Michel' WHERE LastName = 'Thomas'

    (c) MODIFY Users SET LastName = 'Thomas' INTO LastName = 'Michel'

    (d) UPDATE Users SET LastName = 'Michel' WHERE LastName = 'Thomas'

10. ———— is a program that performs some common action on database data and also stored in the database.

    (a) Stored Procedure   (b) Trigger

    (c) Stored Function   (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). Narrate the various applications of DBMS.

    Or

    (b) State and explain database languages and their purpose in DBMS.

12. (a) Identity various Keys used in DBMS.

    Or

    (b) Discuss natural join with suitable examples.

13. (a) Explain in detail aggregate functions in SQL with example.

    Or

    (b) Describe the different data types in SQL. Explain them with example.

14. (a) Elaborate mapping cardinalities in E-R schema.

Or

(b) Compare and Contrast between specialization and generalization in extended ER features.

15. (a) Create Student Table using oracle with the following fields Roll number, Student name, Date of Birth Department name, Percentage obtained.

   (i) Create the mentioned table (Define Roll number as primary key)

   (ii) Insert 3 records

   (iii) Update the Student percentage as 80 whose id roll number is 103.

Or

(b) Discuss about creating views in oracle.

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 database system architecture with neat diagram.

Or

(b) Classify the different types of data models.

17. (a) Enumerate the operations performed in Relational Algebra. Give each an example.

Or

(b) Describe the basic structure of SQL Queries with suitable example.

18. (a) Recall various string operations in SQL with an example.

Or

(b) Briefly explain about nested subqueries in SQL.

19. (a) Outline the different types of attributes in E-R Diagram.

Or

(b) Explain Boyce Codd Normal Form and lossless decomposition.

20. (a) Briefly explain the concept of creating sequences using oracle.

Or

(b) Elaborate the concept of procedure with program.

———————

　　　Reg. No. : ....

Code No. : 20320 E　　**Sub. Code : AMCS 53**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Fifth Semester

Computer Science – Core

PHP AND MYSQL

(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 :

Expand PHP.

(a) PHP stands for Preprocessor Home Page

(b) PHP stands for Pretext Hypertext Processor

(c) PHP stands for Hypertext Preprocessor

(d) PHP stands for Personal Hyper Processor

2. Which is the right way of declaring a variable in PHP?

(a) $3hello　　　　(b) $_hello

(c) $this　　　　　(d) $5_Hello

3. Which of the following are correct ways of creating an array?

(i) state[0] = "karnataka";

(ii) $state[] = array("karnataka");

(iii) $state[0] = "karnataka";

(iv) $state = array("karnataka");

(a) (iii) and (iv)　　(b) (ii) and (iii)

(c) Only (i)　　　　(d) (ii), (iii) and (iv)

4. Which one of the following function is used to start a session?

(a) start_session( )　　(b) session_start( )

(c) session_begin( )　　(d) begin_session( )

5. Which one of the following function is capable of reading a specific number of characters from a file?

(a) fgets( )　　　　(b) fget( )

(c) fileget( )　　　(d) filegets( )

Which of the following function is used to read an existing file in PHP?

(a) openfile( )　　　(b) readfile( )

(c) readf( )　　　　(d) read_f( )

Which operators test whether a subquery returns any rows?

(a) IN and NOT IN

(b) EXISTS and NOT EXISTS

(c) PRESENT

(d) ABSENT

Character data can be stored as

(a) Fixed length string

(b) Variable length string

(c) Either Fixed or Variable length string

(d) None of the mentioned

Which one of the following statements instantiates the mysqli class?

(a) $mysqli = new mysqli( )

(b) mysqli = new mysqli( )

(c) $mysqli->new.mysqli( )

(d) mysqli->new.mysqli( )

10. Which one of the following methods is responsible for sending the query to the database?

(a) send_query( )　　(b) query( )

(c) sendquery( )　　(d) query_send( )

PART B — (5 × 5 = 25 marks)

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

11. (a) Compare and contrast between local and global variables in PHP.

Or

(b) Give a short note on PHP data types.

12. (a) Distinguish between implode and explode function in PHP with an example.

Or

(b) Demonstrate the usage of cookies in PHP.

13. (a) Discuss various file opening modes in PHP.

Or

(b) Explain the following (i) fgets( ) (ii) fgetc( ).

14. (a) Explain the datatypes supported by MySQL.

Or

(b) Discuss the aggregate functions in MySQL with an example.

15. (a) Describe the procedure to validate the input.

Or

(b) Briefly explain about various date and time functions in MySQL.

PART C — (5 × 8 = 40 marks)

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

16. (a) Classify and explain any four operators in PHP. Write one example of each.

Or

(b) Discuss all the looping statements. Write PHP code to explain for a loop.

17. (a) Briefly explain the concept of arrays with suitable example.

Or

(b) Enumerate different types of user-defined functions and write PHP code to explain any one function.

18. (a) How do looping over a file content with feof( ) function? Explain with an example.

Or

(b) Write a brief note on reading and writing binary files in PHP.

Page 5   **Code No. : 20320 E**

19. (a) Describe sorting and filtering data in MySQL. Also explain advanced filtering data manipulation functions.

Or

(b) Discuss about set operators and full text searching in MySQL.

20. (a) Discuss PHP and MySQL database connection process.

Or

(b) Write about error handling in PHP with an example.

_____

Page 6   **Code No. : 20320 E**

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

Code No. : 20323 E   Sub. Code : ASCS 31

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Third Semester

Computer Science

Skill Based Subject — INTRODUCTION TO BIG DATA
ANALYTICS

(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. One terabyte is equals to ———— bytes.

   (a) 10^{12} (b) 10^{15}

   (c) 10^{21} (d) 10^{17}

2. Sensors placed on the objects provide information about their environment, the conditions of use and the objects operations

   (a) autonomy   (b) monitoring

   (c) control   (d) data collection

3. The analytics which focuses on reporting on what happened in the past

   (a) *data collection*

   (b) *modeling and analysis*

   (c) *interpretation*

   (d) *descriptive*

4. An algorithm is a ————; a user can introduce data (inputs) and they will obtain the results (outputs).

   (a) procedure   (b) instructions

   (c) black box   (d) goal

5. ———— is the analysis of data contained in natural language text.

   (a) Text mining

   (b) Machine learning

   (c) Artificial intelligence

   (d) None of the above

6. The collected, cleaned and prepared data can now be explored in ———— phase.

   (a) second (b) third

   (c) fourth (d) fifth

7. A *supervised learning* task is called "classification" if the outputs are discrete or ———— if the outputs are continuous.

   (a) Cluster (b) Modeling

   (c) Regression (d) None of the above

8. ———— are graph structures where each potential decision creates a new node, resulting in a tree-like graph.

   (a) Random forest (b) Decision trees

   (c) Neural networks (d) Classification

9. ———— goal coupling big data and ML is to enable customization, merchandising and A/B testing of new features to enhance the user experience.

   (a) eBay's (b) spotify

   (c) IBM (d) None of the above

10. ———— extract knowledge from a set of data containing input-output pairs.

    (a) Unsupervised algorithms

    (b) Supervised algorithms

    (c) Clustering

    (d) Text mining

PART B — (5 × 5 = 25 marks)

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

11. (a) Write the definition of big data.

    Or

    (b) Write notes on Beyond 3v's.

12. (a) What is data analytics?

    Or

    (b) Explain the analytics culture within companies.

13. (a) What is machine learning?

    Or

    (b) Write notes on

        (i) *Defining the tasks to be accomplished*

        (ii) *Which technology to adopt?*

14. (a) Describe supervised learning.

Or

(b) Write notes on neural network.

15. (a) Write about algorithm selection in detail.

Or

(b) Write notes on

(i) Amazon

(ii) NetFlix.

PART C — (5 × 8 = 40 marks)

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

16. (a) What are the challenges the companies has to overcome in bigdata?

Or

(b) Explain about the data revolution.

17. (a) Explain

(i) Advanced analytics in new paradigm

(ii) Statistical and computational paradigm.

Or

(b) Explain the data analytics address.

18. (a) Mention the disciplines that support the big data analytics process.

Or

(b) How the fifth phase works for transform data into actionable knowledge?

19. (a) What is classifications? Write any two classification algorithm.

Or

(b) Explain about principles of clustering algorithm.

20. (a) Differentiate supervised or unsupervised algorithm : in which case do we use each one?

Or

(b) Discuss about other Ml algorithm.

———————

Reg. No. : ....

Code No. : 30588 E   Sub. Code : ASCS 41

(BCS) DEGREE EXAMINATION, APRIL 2022

Fourth Semester

Computer Science

Skill Based Subject — MULTIMEDIA APPLICATIONS

(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. Woven combination of ———— is described multimedia.

   a) text, graphic art

   b) sound

   c) animation and video elements

   d) all the above

2. The directory and filenames used in URL addresses on the internet are ————

   (a) Case sensitive   (b) Not a case sensitive

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

3. ———— are used for photo ———— realistic images and for complex drawings requiring fine detail.

   (a) Vector drawn   (b) Bitmaps

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

4. Extension for the image file format draw perfect is ————

   (a) .jpg   (b) .wmf

   (c) .wpg   (d) none

5. ———— is the study of the movement and motion of structures that have joints.

   (a) Morphing   (b) Kinematics

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

6. HDTV stands for ————

   (a) High Definition Television

   (b) High Quality Television

   (c) High Density Television

   (d) None

7. Testing costs include ————

   (a) Salaries, focus groups

   (b) Editing

   (c) Beta program

   (d) All the above

8. A ———— is a business document that announces a project, describes it, and solicits bids from qualified contracts to complete it.

   (a) RFP   (b) FRP

   (c) PRF   (d) None

9. Users navigate freely through the content of the project unbound by predetermined routes ————

   (a) Linear   (b) Hierarchical

   (c) Composite   (d) Non linear

10. ———— testing is done by testers and quality analysis inside the organization.

   (a) Beta   (b) Alpha

   (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 is multimedia?

    Or

    (b) Give a brief note on fonts and faces in multimedia building blocks.

12. (a) How doe you organize tools before you start to create images?

    Or

    (b) Describe the power of sound.

13. (a) Differentiate analog versus digital video.

    Or

    (b) What do you mean by video compression?

14. (a) Write down any two multimedia authoring tools.

    Or

    (b) How do you estimate multimedia project costs?

15. (a) How to design the structure of multimedia project?

Or

(b) How to use talents 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) Where to use multimedia? Explain.

Or

(b) Write short notes on font editing and editing tools.

17. (a) What are the different types of image file formats available? Explain each one of them.

Or

(b) How to make MIDI audio? Explain.

18. (a) Discuss in detail about the principles of animation.

Or

(b) Define animation. Write short note on animation by computers.

19. (a) How to make multimedia? Explain.

Or

(b) Discuss in detail about RFP and bid proposal.

20. (a) How to produce multimedia project?

Or

(b) What are the different types of testing will be done on multimedia project delivery? Give a brief note on delivering on the world wide web.

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

Code No. : 20324 E   Sub. Code : ASCS 41

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Fourth Semester

Computer Science

Skill Based Subject — MULTIMEDIA APPLICATIONS

(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. Video is represented as a series of images formally known as ————

   (a) pictures   (b) shots

   (c) frames   (d) snaps

2. The faster the frames are displayed ————

   (a) the rougher the video appears

   (b) the smoother the video appears

   (c) it gets blurry

   (d) none of the mentioned

3. Multimedia files stored on a remote server are delivered to a client across the network using a technique known as ————

   (a) download   (b) streaming

   (c) flowing   (d) leaking

4. Real time streaming is most useful for ————

   (a) short video clips

   (b) long video clips

   (c) extremely short and low quality videos

   (d) none of the mentioned

5. Streaming stored audio/video, files are compressed and stored on a ————

   (a) IP   (b) Server

   (c) Domain   (d) Internet

6. Joint Photographic Experts Group (JPEG) is used to compress —————

   (a) Music   (b) Pictures

   (c) Images   (d) Frames

7. Audio compression can be used for —————

   (a) Speech or music   (b) Voice and data

   (c) Picture and colors (d) Video and voice

8. In audio and video compression, term RBG expresses —————

   (a) Red, blue, green.   (b) Red, black, grey

   (c) Rate, bit, giga bit (d) Red, bluish, greyish

9. In lowest resolution a color frame is made of —————

   (a) 1024 × 768 pixels   (b) 800 × 600 pixels

   (c) 1152 × 864 pixels   (d) 1280 × 1080 pixels

10. In audio and video compression, each frame is divided into small grids, called —————

    (a) Frame   (b) Packets

    (c) Pixels   (d) Mega pixels

Page 3 **Code No. : 20324 E**

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 the approach uses the terms serif font and sans serif font.

    Or

    (b) Summarize the multimedia in schools.

12. (a) Describe the purpose of bitmap software.

    Or

    (b) Explain the 3-D drawing and rendering.

13. (a) Point out the animation by computer.

    Or

    (b) Write a note on analog video.

14. (a) Distinguish between the Windows and Macintosh.

    Or

    (b) Elaborate the structure the elements of a multimedia project proposal.

Page 4 **Code No. : 20324 E**

[P.T.O.]

15. (a) Mention the process of identifying appropriate talent for a production.

Or

(b) How will you prepare for delivery of multimedia project? Explain.

PART C — (5 × 8 = 40 marks)

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

16. (a) What are the different types of font editing and design tools? Explain.

Or

(b) Distinguish between the ASCII character set and extended character set.

17. (a) Illustrate the crucial aspects of prepare a digital audio files.

Or

(b) Compare the MIDI and digital audio.

18. (a) Outline the purpose of video format converters.

Or

(b) How will you create an animated scene? Explain.

19. (a) Discuss the intangible elements needed to make good multimedia.

Or

(b) Elaborate the estimate the cost, timeline, and tasks required to complete a project.

20. (a) Illustrate the fundamental organizing structures used in multimedia projects.

Or

(b) How will you delivering on the World Wide Web? Explain.

Code No. : 20412 E   Sub. Code : CACS 11/
                                            CASE 11

B.Sc.(CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

First Semester

Computer Science/Software Engineering

DISCRETE MATHEMATICS

(For those who joined in July 2021 onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. If R is a relation "Less Than" from A = {1, 2,3,4) to
    B = {1, 3,5) then RoR-1 is —————————

    (a) {(3,3), (3,4), (3,5)}

    (b) {(3,1), (5,1), (3,2), (5,2), (5,3), (5,4)}

    (c) {(3,3), (3,5), (5,3), (5,5)}

    (d) {(1,3), (1,5), (2,3), (2,5), (3,5), (4,5)}

2. R is a binary relation on a set S and R is reflexive
    if and only if ——————————

    (a) r(R) = R   (b) s(R) = R

    (c) t(R) = R   (d) f(R) = R

3. Which of the following statement is a proposition?

    (a) Get me a glass of milkshake

    (b) God bless you!

    (c) What is the time now?

    (d) The only odd prime number is 2

4. A function is said to be _____ if and only if
    $f(a) = f(b)$ implies that $a = b$ for all a and b in
    the domain of f.

    (a) One-to-many   (b) One-to-one

    (c) Many-to-many   (d) Many-to-one

5. Let f and g be the function from the set of
    integers to itself, defined by $f(x) = 2x + 1$ and
    $g(x) = 3x + 4$. Then the composition of f and g is

    —————————

    (a) $6x + 9$ (b) $6x + 7$

    (c) $6x + 6$ (d) $6x + 8$

6. Let A order $(a \times b)$ and B order $(c \times d)$ be two
    matrices, then if AB exists, the order of AB is
    —————————

    (a) $a \times d$ (b) $b \times c$

    (c) $a \times b$ (d) $c \times d$

7. All the diagonal elements of a skew-symmetric
    matrix is

    (a) 0   (b) 1

    (c) 2   (d) Any integer

8. The binary relation $U = \Phi$ (empty set) on a set
    $A = \{11, 23, 35\}$ is _____

    (a) Neither reflexive nor symmetric

    (b) Symmetric and reflexive

    (c) Transitive and reflexive

    (d) Transitive and symmetric

9. A graph is a collection of_____

    (a) Row and columns   (b) Vertices and edges

    (c) Equations   (d) None of these

10. A graph G is called a _____ if it is a connected
    acyclic graph

    (a) Cyclic graph   (b) Regular graph

    (c) Tree   (d) Not a graph

PART B — (5 × 5 = 25 marks)

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

11. (a) Consider 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.

         $a \in A$ is related to $b \in B$ .i.e., aRb, if and only
         if $a < b$

                        Or

    (b) Find the number of distinct relations from a
         set A to a set B.

12. (a) Let $A = \{a,b,c\}$, $B = \{1,2,3\}$ and
         $f = \{(a, 1), (b, 3), (c, 2)\}$. Determine the inverse.

                        Or

    (b) Give the f_1 and f_2 are functions from R to R,
         in which $f_1(x) = x$ and $f_2(x) = (1/x) - x$.
         Determine the functions $f_1 + f_2$ and $f_1 f_2$

13. (a) Write down the laws of formal logic.

                        Or

    (b) Find the negation of the following
         propositions:

         (i)   Today is Saturday.

         (ii) It is a rainy day.

         (iii) It snows and Mona does not drive the
               car.

[P.T.O.]

14. (a) If A is any square matrix, show that AA^T is symmetric matrix.

Or

(b) If both A and B are skew-symmetric matrices of the same order such that AB = BA, then show that AB is symmetric.

15. (a) Distinguish between the undirected and directed graphs.

Or

(b) Explain the representation of graph.

PART C — (5 × 8 = 40 marks)

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

16. (a) Find the composition of the relations
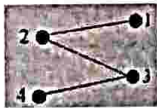
$R_1 = \{(1,2),(1,6),(2,4),(3,4),(3,6),(3,8)\}$ and

$R_2 = \{(2,x),(4,y),(4,z),(6,z),(8,x)\}$

Or

(b) Let A = (1, 2, 3, 4} and B = {p, q, r, s} and R = {(1, p), (1, q), (1, r), (2, q), (2, r) , (2, s)}. Find M_R.

17. (a) Let g be the function from the set {a, b, c} to itself such that $g(a) = b$, $g(b) = c$, and $g(c) = a$. Let f be the function from the set {a, b, c} to the set (1, 2, 3) such that $f(a) = 3$, $f(b) = 2$, and $f(c) = 1$. Determine the composition of f and g and also the composition of g and f.

Or

(b) Show that the function $f(x) = x^3$ and $g(x) = x^{1/3}$ for all $x \in R$ are inverse of each other.

18. (a) Show that $p \Rightarrow q$ is the same as $\sim q \Rightarrow \sim p$.

Or

(b) Show that the proposition $(p \wedge \sim q) \vee \sim (p \wedge q)$ is a tautology.

19. (a) What are the types of matrices? Explain.

Or

(b) If the product of two non-zero square matrices is a zero matrix, then prove that both of them are singular matrices.

20. (a) Show the two graphs as shown in figure (a) and figure (b) are isomorphic
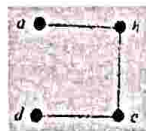
(a)   (b)

Or

(b) What are the operations on graphs? Explain.

(6 pages)

Reg. No. : ....

Code No. : 20415 E   Sub. Code : CACS 31

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Third Semester

Computer Science — Allied

SCRIPTING LANGUAGES

(For those who joined in July 2021 onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which features was already introduced before
    HTML5 ——————?

    (a) Canvas/SVG

    (b) Video

    (c) Geolocation

    (d) Frames

2. Which is the correct syntax of doctype in HTML5
    ——————?

    (a) < ! doctype html >   (b) < doctype html >

    (c) < / doctype html >   (d) none

3. What types of CSS is generally recommended for
    designing large web pages ——————?

    (a) inline   (b) internal

    (c) external   (d) none

4. Which of the following are new additions for input
    tag's attribute type ——————?

    (a) color   (b) date

    (c) number   (d) all the above

5. Which of the following defines the color of a line,
    text or outline of an element ——————?

    (a) text   (b) stroke

    (c) line   (d) all the above

6. In HTML, Audio / Video DOM, ——————
    sets or returns whether the audio / video should be
    loaded when the page loads

    (a) preload   (b) autoplay

    (c) buffered   (d) controller

7. Which tag is used with Javascript —————?

    (a) <canvas>   (b) <article>

    (c) <footer>   (d) none

8. ————— is a scripting language used to make the website interactive.

    (a) Javscript   (b) C

    (c) C++   (d) Pascal

9. ————— is a Javascript library that implements the most common user interface elements and interactions like sliders, accordions, tabs and so on

    (a) Javascript   (b) JQuery UI

    (c) VTS   (d) JCL

10. Which of the following JQuery method is used to attach a handler to an event —————?

    (a) unbind () method

    (b) attach () method

    (c) bind () method

    (d) none

Page 3   Code No. : 20415 E

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 client side programming?

    Or

    (b) How to work with characters in HTML5?

12. (a) List out cascading style rules.

    Or

    (b) Define a form in HTML5.

13. (a) How do you add Text Showdowns in CSS3?

    Or

    (b) List out and describe the common video formats.

14. (a) Describe about the Document Object Model tree.

    Or

    (b) Write down the different types of if statements available in Javascript.

Page 4   Code No. : 20415 E
[P.T.O.]

15. (a) How to change styles using CSS objects?

Or

(b) What do you mean by event listeners?

PART C — (5 × 8 = 40 marks)

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

16. (a) How to create a Webpage? Explain.

Or

(b) How is format text and how to use hypertext in HTML5?

17. (a) What are the steps involved in styling Table?

Or

(b) How to use Input fields in HTML5 forms?

18. (a) How do you add more elaborate borders around objects?

Or

(b) How to play audio in Webpage?

19. (a) Where do you put your Javascript Code? Explain with an example.

Or

(b) Illustrate different types of looping statements available in Javascript.

20. (a) Justify " Modification of Data in a Webpage is easier using JQuery".

Or

(b) How to find and understand events in a webpage?

_____

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

Code No. : 20409 E   Sub. Code : CMCS 11/
CMSE 11

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

First Semester

Computer Science / Software Engineering – Core

PROGRAMMING IN C

(For those who joined in July 2021 onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. All keywords in C are in ——————— letters
    (a) lowercase   (b) uppercase
    (c) symbolic   (d) camel case

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. What is an example of iteration in C?
    (a) for
    (b) while
    (c) do...while
    (d) all of the above

4. The keyword 'break' cannot be simply used within
    ——————— .
    (a) do-while
    (b) if-else
    (c) for
    (d) while

5. What is right way to Initialize array?
    (a) int num [6] = { 2, 4, 12, 5, 45, 5 };
    (b) int n{ } = {2, 4, 12, 5, 45, 5};
    (c) int n{6} = { 2, 4, 12 };
    (d) int n (6) = { 2, 4, 12, 5, 45, 5 };

6. What will strcmp( ) function do?
    (a) compares the first n characters of the object
    (b) compares the strings
    (c) undefined function
    (d) copies the string

Page 2   Code No. : 20409 E

7. What is the output of following code?

```
#include <stdio.h>
int main ()
{
void foo ();
printf("1");
foo();
}
Void foo()
{
printf("2");
}
```

   (a) 1 2   (b) 2 1

   (c) 1 2 2 1   (d) 1 2 1 1

8. The size of a union is determined by the size of the
   ——————— member in the union

   (a) first   (b) biggest

   (c) last   (d) smallest

9. ——————— is used to write a set of characters
   into a file.

   (a) cput( )   (b) fprintf( )

   (c) out( )   (d) outfile( )

10. Comment on the following Pointer declaration int
    * ptr, p;

    (a) ptr is a Pointer to integer, p is not

    (b) ptr and p, both are pointers to integer

    (c) ptr is pointer to integer, p may or may not be

    (d) ptr and p, both are not pointers

    PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Describe C character set.

        Or

    (b) Explain any two storage classes in C.

12. (a) Develop a C program to find sum of digits of
        an integer.

        Or

    (b) Design a C program to check if a number is
        Positive, negative or zero.

13. (a) Illustrate reading strings from terminal.

        Or

    (b) Using one-dimensional array as input, write a
        program to find largest element in that array.

14. (a) Illustrate declaration of structure in C.

Or

(b) Explain declaration and usage of user-defined functions.

15. (a) Choosing pointer of variables, write a C program to exchange the values of variables x and y.

Or

(b) Summarize fopen() statement usage in C.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Write a note on data types supported by C.

Or

(b) Write a C program to illustrate the usage of bitwise operators.

17. (a) Describe decision making and branching statements in C.

Or

(b) Using switch statement in a C program to solve quadratic equation.

18. (a) Illustrate the usage of two-dimensional and multi-dimensional arrays with real life arrays.

Or

(b) Write a C program to sort a set of strings

19. (a) Summarize the concepts behind different types of user defined functions in C.

Or

(b) Devise a recursive program to find GCD of two integers using recursion with suitable comments.

20. (a) Consider pointer as function argument and write a program segment to explain this concept.

Or

(b) Criticize the file manipulation in C.

_____

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

Code No. : 20410 E Sub. Code : CMCS 21/
CMSE 21

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Second Semester

Computer Science/Software Engineering — Core

OBJECT ORIENTED PROGRAMMING WITH C++

(For those who joined in July 2021 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. What does a class in C++ holds?
   (a) Data
   (b) Functions
   (c) Both data and functions
   (d) Arrays

2. How many specifiers are present in access specifier in class?
   (a) 1 (b) 2
   (c) 3 (d) 4

3. Constructors are used to _____
   (a) Initialize the objects
   (b) Construct data members
   (c) Both (a) and (b)
   (d) Delete objects

4. How many parameters does a default constructor requires
   (a) 1 (b) 2
   (c) 0 (d) 3

5. Which is the correct example for unary operator?
   (a) & (b) = =
   (c) – (d) /

6. What are the things that are inherited from base class?
   (a) Constructors and destructors
   (b) Operator functions
   (c) Friend functions
   (d) All of the above

7. A pointer can be initialized with —————

(a) Null

(b) Zero

(c) Address of an object of same type

(d) All of the above

8. A pointer contains —————

(a) Address of a variable

(b) Name of the variable

(c) Value of the variable

(d) All of the above

9. Which of the following method is used to open file?

(a) Using open()

(b) Using constructor

(c) Both (a) and (b)

(d) None

10. Can we have overloading of the function template?

(a) Yes

(b) No

(c) May be

(d) Can't say

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Illustrate the use of static data members in a static member function with an example.

Or

(b) Write a C++ program to ADD two COMPLEX NUMBERS using objects as function arguments.

12. (a) What is a constructor? List out its characteristics with example.

Or

(b) Write a C++ program to concatenate two strings using dynamic constructors.

13. (a) Define operator overloading. Explain the rules for overloading operators.

Or

(b) Illustrate the use of single inheritance with an example.

14. (a) Explain the use of this pointer with an example.

Or

(b) Discuss the application of manipulators in detail.

15. (a) Explain file mode parameters with examples.

Or

(b) Write a C++ program to perform scalar product of two vectors using class template.

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 concepts of object oriented programming in detail.

Or

(b) Define class. How will you specify a class and its member function? Discuss.

17. (a) Define constructor. Explain its types with examples.

Or

(b) Discuss the use of destructors in detail.

18. (a) Illustrate the application of friend function in operator overloading with + operator.

Or

(b) Describe multiple inheritance with an example.

19. (a) Why do you use virtual functions? Discuss.

Or

(b) Explain unformatted I/O operations with examples.

20. (a) What are the methods available for opening files? Explain.

Or

(b) Write a C++ program to SORT integral and float numbers using function template.

———————

Reg. No. : ....

Code No. : 20411 E   Sub. Code : CMCS 31

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Third Semester

Computer Science — Core

JAVA PROGRAMMING

(For those who joined in July 2021 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 option leads to the portability and security of java?

    (a) Byte code is executed by JVM

    (b) Use of exception handling

    (c) Dynamic binding between objects

    (d) None

2. Identify the keyword among the following that makes a variable belong to a class, rather than being defined for each instance of the class

    (a) final   (b) static

    (c) volatile   (d) abstract

3. Identify the correct definition of a package ————

    (a) A package is a collection of editing tools

    (b) A package is a collection of classes

    (c) A package is a collection of classes and interface

    (d) None

4. When an array is passed to a method, what does the method receive?

    (a) the reference of the array

    (b) a copy of the array

    (c) length of the array

    (d) none

5. Exception created by try block is caught in which block ————

    (a) catch   (b) throw

    (c) final   (d) none

6. It is a process in which two or more parts of same process run simultaneously ———— programming.

    (a) exception handling

    (b) multi threaded

    (c) thread based

    (d) none

7. Which of these functions is called to display the output of an applet? ————

    (a) display   (b) paint

    (c) display applet( )   (d) print applet( )

8. ———— method is used to initialize an applet.

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

    (c) destroy( )   (d) stop( )

9. Which of these packages contains all the classes and methods required for event handling in Java? ————

    (a) java.applet   (b) java.awt

    (c) java.event   (d) java.awt.event

10. What is the abbreviation of AWT? ————

    (a) Applet Windowing ToolKit

    (b) Abstract Windowing ToolKit

    (c) Absolute Windowing ToolKit

    (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) Differentiate : overloading versus overriding.

Or

    (b) Tabulate various access specifies available in Java.

12. (a) Define array. How to create two dimensional array?

Or

    (b) Write short note on naming conventions in Java.

13. (a) What do you mean by custom exception?

Or

    (b) What are the different types of errors available? Explain any two.

14. (a) How to build an applet?

Or

    (b) How to run an applet?

15. (a) Write short note on AWT packages.

Or

(b) How to draw circle?

PART C — (5 × 8 = 40 marks)

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

16. (a) Define class. Give a brief note on method declaration and creating objects.

Or

(b) Illustrate extending class with an example.

17. (a) Define interface. How to implement it in java.

Or

(b) How to create package in Java? Explain with an example program.

18. (a) What is exception? How to handle exception?

Or

(b) What do you mean by thread? How to stop and block a thread?

19. (a) Illustrate applet life cycle and applet tag in detail.

Or

(b) How to design a web page? Write an applet code to display numerical values.

20. (a) What do you mean by graphics class? How to draw lines and rectangles?

Or

(b) What is event handling? Write short note on it.

————————

Reg. No. : ....

Code No. : 20418 E   Sub. Code : CNCS 32

U.G. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Third Semester

Computer Science

Non Major Elective – BASIC PROGRAMMING
DESIGN

(For those who joined in July 2021 onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. In the flowchart, the symbol represents stpes in the process _____.

    (a) Oval   (b) Diamond

    (c) Rectangle   (d) None

2. A _____ is a tabular representation of program logic

    (a) Decision Table   (b) Flowchart

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

3. In _____ programming, allows constructing a program using a set of objects and their interactions.

    (a) Structured   (b) Unstructured

    (c) Object oriented   (d) None

4. Debugging Means _____.

    (a) Errors   (b) Detecting Errors

    (c) Correcting Errors (d) None

5. The components used in second generation of computer _____.

    (a) IC   (b) Vaccum Tube

    (c) VLSI   (d) Transistor

6. Features of good programming language _____.

    (a) Reliability

    (b) Concurrency support

    (c) Safety

    (d) All the above

7. _____ is a set6 of computer programs and associated documents and data.

    (a) Software   (b) Hardware

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

8. _____ is a software that provides basic machine instructions that allow the hardware to function and communicate with other software running on a device.

    (a) Shareware   (b) Liveware

    (c) Firmware   (d) None

9. An _____ is software program designed to detect and remove viruses and other kinds of malicious software from the computer.

    (a) Firmware   (b) Liveware

    (c) Antivirus   (d) None

10. A _____ is nothing more than address of a given unique resource on the web.

    (a) URL   (b) E-Mail

    (c) FTP   (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) Define computer program. How to develop computer program.

    Or

    (b) Give a brief note on Algorithm.

12. (a) What is program testing and debugging?

    Or

    (b) What are the characteristics available in good programming?

13. (a) What are the components used in first and second generation? Give a note on it.

    Or

(b) Write short note on third and fourth generation of computers.

14. (a) What do you mean by system software?

Or

(b) Give a brief note on application software.

15. (a) What is the use of search engine?

Or

(b) How does E-mail work?

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Define flowchart. Explain its importance, symbols guidelines, structure and limitations in detail.

Or

(b) What are the steps involved in developing decision table? Describe its advantages and disadvantages.

17. (a) What do you mean by program documentation? Explain its types.

Or

(b) Discuss in detail about program paradigam.

18. (a) Write short note on the following:

(i) Evaluation of programming language

(ii) Classification of programming language

Or

(b) What are the features of good programming language? Explain.

19. (a) What are the different terminologies used in software?

Or

(b) How do you define software? List out and explain the relationship between hardware and software.

20. (a) List out and explain any ten basic internet terms.

Or

(b) Describe internet applications in detail.

Page 5   Code No. : 20418 E

Page 6   Code No. : 20418 E

(6 pages)

Reg. No. : _____

Code No. : 20416 E   Sub. Code : CSCS 31

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Third Semester

Computer Science

Skill Based Subject — DIGITAL DESIGN

(For those who joined in July 2021 onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Convert the following decimal number 187 to 8-bit binary _____
    (a) 10111011   (b) 11011101
    (c) 10111101   (d) 10111100

2. Which of the following are known as universal gates?
    (a) NAND and NOR   (b) AND and OR
    (c) XOR and OR   (d) None

3. A _____ is a group of two adjacent 1's.
    (a) Pair   (b) Quad
    (c) Octet   (d) None

4. _____ is used to analyze and simplify the digital (logic) circuits.
    (a) Shift register (b) Counter
    (c) Boolean algebra (d) None.

5. _____ refers to a type of combinational circuit that accepts multiple inputs of data but provides only a single output.
    (a) De-multiplexer (b) Multiplexer
    (c) Both (a) and (b) (d) None

6. 2's complement of 101101 _____
    (a) 100100   (b) 001000
    (c) 111111   (d) 010011

7. The _____ flip flop is basically a combination of two JK flip flops connected together in a series configuration.
    (a) Master slave   (b) D
    (c) T   (d) None

8. D flip flop is also called as ———— flip flop.

(a) Delay   (b) Master slave

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

9. SISO stands for ————

(a) Shift in shift out

(b) Parallel in serial out

(c) Parallel in parallel out

(d) Serial in serial out

10. A sequential device loads the data present on its inputs and then moves or 'shifts' it to its output once every clock cycle, hence the name ————

(a) counter   (b) shift register

(c) both (a) and (b)   (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) Give a brief note on octal and hexadecimal number system.

Or

(b) Describe the usage of excess-3 code.

12. (a) Define the terms : pairs, quads and octets in K-map.

Or

(b) Tabulate the postulates and theorems of Boolean algebra. .

13. (a) What do you mean by sign magnitude numbers?

Or

(b) Define the terms encoder and decoder.

14. (a) Draw the logic diagram and characteristics table for edge triggered JK master slave flip flops.

Or

(b) Define flip flop. What is edge triggered D flip flop?

15. (a) What is universal shift register?

Or

(b) Write short note on Serial In and Parallel Out shift register.

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

16. (a) Convert the binary numbers 1001, 1101, 101010, 11111, 10111 into its decimal numbers.

Or

(b) Tabulate the different types of logic gates with its logic diagram and truth table.

17. (a) Simplify the expression : $F(a,b,c) = \Sigma(1,3,4,5)$ using both sum of products and product of sum in a K-map. Compare the results.

Or

(b) Simplify the Boolean function ;

$F = A'B'C' + B'CD' + A'BCD' + AB'C'$.

18. (a) How to do binary subtraction with r's compliments? Explain with an example.

Or

(b) What is demultiplexer? Give a brief note on BCD to decimal decoder.

19. (a) Discuss in detail about edge triggered RS flip flop.

Or

(b) With neat logic diagram and characteristic table explain edge triggered JK flip flop.

20. (a) Illustrate serial in and serial out shift register.

Or

(b) With neat diagram, describe parallel in and parallel out shift register.

————

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

Code No. : 20121 E   Sub. Code : SACS 21/
SASE 21

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Second Semester

Computer Science/Software Engineering – Allied

DIGITAL DESIGN

(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. The radix of the hexa-decimal number system is
    _____

    (a) 0   (b) 2

    (c) 8   (d) 16

2. The _____ gate is called any-or-all gate.
    (a) NAND   (b) NOR
    (c) OR   (d) AND

3. K-map technique provides a systematic method for simplifying
    (a) multiplexers
    (b) logic gates
    (c) Boolean expressions
    (d) None of these

4. Canonical form is a unique way of representing
    _____
    (a) SOP
    (b) Minterm
    (c) Boolean Expressions
    (d) POS

5. What is a multiplexer?
    (a) It is a type of decoder which decodes several inputs and gives one output
    (b) A multiplexer is a device which converts many signals into one
    (c) It takes one input and results into many output
    (d) It is a type of encoder which decodes several inputs and gives one output

6. 2's complement of 11001011 is _____
   (a) 01010111   (b) 11010100
   (c) 00110101   (d) 11100010

7. Register is a group of _____
   (a) OR & AND gates   (b) Flip-flops
   (c) OR gates   (d) None of these

8. When both inputs of a J-K flip-flop cycle, the output will _____
   (a) Be invalid   (b) Change
   (c) No change   (d) Toggle

9. A shift register is defined as _____
   (a) The register capable of shifting information to another register
   (b) The register capable of shifting information either to the right or to the left
   (c) The register capable of shifting information to the right only
   (d) The register capable of shifting information to the left only

10. Based on how binary information is entered or shifted out, shift registers are classified into _____ categories.
    (a) 2   (b) 5
    (c) 3   (d) 4

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Convert $(101101.1101)_2$ to decimal and hexadecimal form.

    Or

    (b) Write about basic gates with suitable diagram.

12. (a) State and prove De Morgan's theorem.

    Or

    (b) Give a short note on Sum of product method.

13. (a) Neatly sketch a block diagram of Multiplexer and explain it.

    Or

    (b) Write short notes on 2's Complement Arithmetic.

14. (a) Explain the Logic diagram of JK flip-flop.

    Or

    (b) Write short notes on edge triggered D flip flop.

15. (a) Describe about Serial in - Serial out Shift (SISO) Register.

Or

(b) Give short notes on Parallel in - Serial out (PISO) Shift Register.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Convert the following:

(i) $(0.513)_{10}$ to octal

(ii) $(0.6875)_{10}$ to binary.

Or

(b) Explain logic operations with NOR and NAND Gates with neat diagram.

17. (a) State and prove De Morgan's theorem. Also Apply De Morgan's theorem for the function $((A + B + C)D)'$.

Or

(b) Describe the two canonical forms of Boolean algebra.

18. (a) Explain The Half adder? Implement the full adder using two half adders.

Or

(b) Describe the functionality of a Multiplexer and Demultiplexer.

19. (a) Explain the working of the following

(i) RS flip-flop

(ii) D flip-flop

Or

(b) Elucidate in detail about edge triggered JK flip flops.

20. (a) Elaborate in detail about types of shift registers.

Or

(b) Briefly explain universal shift register with suitable diagram.

ages)

Reg. No. : ....

de No. : **30389 E**   Sub. Code : **SECS 6 B/**
SESE 6 B

c. (CBCS) DEGREE EXAMINATION, APRIL 2022

Sixth Semester

Computer Science / Software Engineering

Major Elective — BIGDATA ANALYSIS

(For those who joined in July 2017 onwards)

ə : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

———————— is the precise analysis of social network.

(a)   SNA   (b)   GPO

(c)   Data analytics   (d)   All the above

2.   The term ———————— is used to describe structured data that doesn't fit into a formal structure of data models.

(a)   Unstructured   (b)   Big data

(c)   Semi-structured   (d)   Access

3.   ———————— business analytics provides strategies to profit from disruption.

(a)   Disruptive   (b)   Holistic

(c)   Bigdata   (d)   All the above

4.   ———————— is only as good as the marketing data that is used as inputs.

(a)   MMM   (b)   SNA

(c)   MIS   (d)   SAS

5.   The software industry has been some successful companies excel in the game of ————————

(a)   Denial of service

(b)   Tech Target

(c)   Software as a services

(d)   BI

6.   ———————— are a great leveling field where making complicated actions easy in the name of the game.

(a)   Wireless devices   (b)   Mobile devices

(c)   CPU   (d)   Palmtop

———————— programming is another order of magnitude more difficult the standard programming.

(a)   Basic   (b)   Parallel

(c)   Embeded   (d)   Software

———————— which performs a task and returns one value.

(a)   UDTF   (b)   UDA

(c)   UDF   (d)   SQL

———————— are senior management folks with a story vision and passion for data-driven decision making.

(a)   Generals   (b)   Soliders

(c)   Captains   (d)   Governance

———————— each business function owns its own data infrastructure and analytic team.

(a)   Centralized analytics

(b)   Decentralized analytics

(c)   Federate model

(d)   Incremental analytics

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 three standard storm in Big data.

Or

(b)   Discuss a wider variety of data in Bigdata.

12.   (a)   Write short notes on calculating risk in marketing.

Or

(b)   Write about marketing mixed modeling.

13.   (a)   What are the three elements that have impacted of mobile BI ?

Or

(b)   Explain the adding big data technology into the mix.

14.   (a)   Write short notes on massively parallel processing.

Or

(b)   Write short notes on 360° modeling.

15. (a) Explain the professional traits required for decision science.

Or

(b) What are the key factors in alienation relationships.

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 digital marketing and non-line world.

Or

(b) Discuss in detail about Beond's taken on three big data vs in advertising.

17. (a) Describe the software as a service BI.

Or

(b) Explain :

(i) Optimization and marketing mixed modeling.

(ii) Measurement can be tricky.

18. (a) Describe the ease of mobile application deployment.

Or

(b) Explain the predictive analytics more into lime light.

19. (a) Discuss in detail about big data computation.

Or

(b) Explain in detail about the consumption of analytics.

20. (a) Discuss the

(i) scale and convergence

(ii) innovation.

Or

(b) Explain the seven global privacy principles.

———————

Reg. No. : ....

ode No. : **30390 E**   Sub. Code : **SECS 6 C**

c. (CBCS) DEGREE EXAMINATION, APRIL 2022

Sixth Semester

Computer Science

Major Elective — NEURAL NETWORKS

(For those who joined in July 2017 onwards)

.me : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. ——————— can also be defined as parameterized computational non linear algorithm for signal processing.

   (a)   Neural networks   (b)   Neuron networks

   (c)   Weights   (d)   Function

2. ——————— learning rule is the oldest and most famous of all learning rules.

   (a)   Hebbian   (b)   Perceptron

   (c)   Delta   (d)   Competitive

3. ——————— basis function network can be used for approximating functions and recognizing patterns.

   (a)   Activation   (b)   Radial

   (c)   SOM   (d)   Cluster

4. ——————— self organizing maps are capable of reproducing important aspects of the structure of biological neural nets.

   (a)   Kohen's   (b)   Vapnile

   (c)   Broonheel   (d)   Parker

5. ——————— perceptron networks is an important class of neural network.

   (a)   Multi layer   (b)   Single layer

   (c)   Weight   (d)   None of the above

6. ——————— faster learning of a BPN can be obtained by using initialization.

   (a)   Hidden   (b)   Sequential

   (c)   Nguyen - Window   (d)   Error

7. The ——————— distance between two vectors is the number of component in which the vectors different.

   (a)   Hamming   (b)   Gaussian

   (c)   Equi   (d)   Vector

8. The ——————— developed by Robert Hecht Nielson beyond the representational limits of single
layer networks.

) CCM   (b)   CPN

) ART   (d)   Accretive model

9. ——————— compression is a process of reducing the number of bits required to represent an image.

) Video   (b)   Image

) Audio   (d)   Delphi

10. ——————— evaluate information captured from network communication, analyzing the stream of packets traveling across the network.

) Host based Id's

) Vulnerability

   ı Network based Id's

) Hardware based Id's

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Define artificial neural networks. Explain.

Or

(b) Explain the differences between the brain and the computers.

12. (a) Explain memory based learning.

Or

(b) Write an algorithm for Hebbnet.

13. (a) Explain the merits and demerits of back propagation network.

Or

(b) Explain the applications of back propagation.

14. (a) What is hamming net? Explain.

Or

(b) What are the two types of counter propagation net?

15. (a) Explain the basic concept of control systems.

Or

(b) State that selection of the wavelet filter algorithm.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Compare biological and artificial neural networks.

Or

(b) Explain the Artificial neural network terminologies.

17. (a) Brief note on multiplayer perceptrons.

Or

(b) Explain the perceptron algorithm for several output class.

18. (a) Discuss in detail about discrete hope field.

Or

(b) Explain the continuous hope field net with example.

19. (a) Discuss the learning vector quantization.

Or

(b) Explain the max net.

20. (a) Explain in detailed about neural networks in communication.

Or

(b) Describe the neural networks in robotics.

————

Reg. No. : ....

de No. : **30372 E**   Sub. Code : SMCS 21/
SMSE 21/AMCS 21/
AMSE 21/CMCS 21/
CMSE 21

c. (CBCS) DEGREE EXAMINATION, APRIL 2022

Second Semester

omputer Science/Software Engineering — Core

BJECT ORIENTED PROGRAMMING IN C++

(For those who joined in July 2017 onwards)

ne : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

Which of the following is the address operator?

(a)   @   (b)   #

(c)   &   (d)   %

2.   Which of the following features must be supported by any programming language to become a pure object-oriented programming language?

(a)   encapsulation   (b)   inheritance

(c)   polymorphism   (d)   all of the above

3.   What is the role of a constructor in classes?

(a)   To modify the data whenever required

(b)   To destroy an object

(c)   To initialize the data members of an object when it is created

(d)   To call private functions from the outer world

4.   What is a copy constructor?

(a)   A constructor that allows a user to move data from one object to another

(b)   A constructor to initialize an object with the values of another object

(c)   A constructor to check the whether to objects are equal or not

(d)   A constructor to kill other copies of a given object

5.   While overloading binary operators using member function, it requires ———— argument.

(a)   2   (b)   1

(c)   0   (d)   3

hen the inheritance is private, the private ethods in base class are ———— in the erived class (in C++).

)   Inaccessible   (b)   Accessible

)   Protected   (d)   Public

pointer can be initialized with

)   Null

)   Zero

)   Address of an object of same type

)   All of the above

hich among the following best describes lymorphism?

)   It is the ability for a message/data to be processed in more than one form

)   It is the ability for a message/data to be processed in only 1 form

)   It is the ability for many message/data to be processed in one way

)   It is the ability for undefined message/data to be processed in at least one way

hich of the following is used to create an output ream?

)   ofstream   (b)   ifstream

)   iostream   (d)   fsstream

10.   Which of the following statements are correct?

(i)   It is not possible to combine two or more file opening mode in open( ) method.

(ii)   It is possible to combine two or more file opening mode in open( ) method.

(iii)   ios::in and ios::out are input and output file opening mode respectively

(a)   (i), (iii)   (b)   (ii), (iii)

(c)   (iii) only   (d)   (i), (ii)

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 short note on classes and objects.
                                    Or
       (b)   Write a short note on arrays of objects.

12.   (a)   What are the features of constructors?
                                    Or
       (b)   What is constructor overloading? Explain with example.

13.   (a)   Write a short note on operator overloading.
                                    Or
       (b)   Write a short note on inheritance.

14. (a) Describe in detail about managing output with manipulators

Or

(b) Explain about compile time polymorphism.

15. (a) What is the use of Fstream header file in C++?

Or

(b) List the file modes and give a short note.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Write a brief note on functions.

Or

(b) Explain in detail about passing object as function arguments.

17. (a) Explain in detail about types of constructor.

Or

(b) Difference between constructor and destructor with example.

18. (a) Explain about types of inheritance.

Or

(b) Explain :

(i) Virtual base classes and

(ii) Abstract classes.

19. (a) Answer the below : (i) and (ii) questions.

(i) What is virtual functions with example.

(ii) What are the rules for virtual functions?

Or

(b) Explain in detail about pointers to derived class with example.

20. (a) How to opening and closing a file using C++ file handling with example?

Or

(b) Explain about sequential input and output operators with put( ), get( ), write( ) and read( ) functions.

———————

Reg. No. : ....

Code No. : 20099 E   Sub. Code : SMCS 41/
SMSE 41

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Fourth Semester

Computer Science/Software Engineering – Core

VISUAL BASIC

(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 window associated with the project will stay within a single container known as the ———

   (a) child
   (b) node
   (c) parent
   (d) leaf

2. ——— property is used to hide the object at run time.

   (a) Hide
   (b) Visible
   (c) Enable
   (d) View

3. A ——— menu is a floating menu that is displayed over a form independent to the menu bar.

   (a) Click-down
   (b) Pop up
   (c) Menu
   (d) Icon

4. ——— is selected from the project menu which displays a components box.

   (a) Components
   (b) Tools
   (c) Component box
   (d) List

5. The RDO consists of objects and collections that form a framework for manipulating the components of a remote ———

   (a) ODBC
   (b) Remote ODBC
   (c) System
   (d) Database module

6. The ——— method of the connection object is used to run queries against the database.

   (a) Open
   (b) Resultset
   (c) Open resultset
   (d) Dataset

7. DDE is an acronym for ———

   (a) Dynamic Data Exchange
   (b) Dynamic Data Enable
   (c) Database Dynamically Enabled
   (d) Dynamic Data Inexchange

8. The ——— method can be used to specify an empty embedded object at run time.

   (a) CreateEmbed
   (b) Embed
   (c) Clear
   (d) Insert

9. ——— make a particular type of data available.

   (a) Provider
   (b) Data provider
   (c) Consumer
   (d) Components

10. The ——— object is used to save a query definition in application.

    (a) Button
    (b) Connection
    (c) Command
    (d) Query

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 visual basic program for factorial with design and output.

    Or

    (b) Write short notes on combo box.

12. (a) Write about the events exit, cancel coding with explanation in menus.

    Or

    (b) Explain about changing cell width and cell height in flex grid control.

13. (a) Write short notes on executing SQL in RDO.

    Or

    (b) Write about finding a specific record in ODBC.

14. (a) Explain :

    (i) OLE - container application   (2)
    (ii) Linked objects   (2)
    (iii) Embedded objects.   (1)

    Or

    (b) Write short notes on collections.

15. (a) Write about working with ADO data control with suitable example.

Or

(b) Write short notes on file system.

PART C — (5 × 8 = 40 marks)

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

16. (a) Develop a VB application for designing a simple calculator and discuss.

Or

(b) Explain about different characteristics of controls 14 visual basic.

17. (a) How to creates a MDI form in VB? Explain with example.

Or

(b) Discuss about the application of flex grid control in VB.

18. (a) Explain about the various RDO objects in detail.

Or

(b) How to access data using RDO? Explain.

19. (a) Describe in detail using OLE automation objects.

Or

(b) Explain about class models in detail.

20. (a) Discuss about built in ActiveX controls.

Or

(b) Discuss the following with examples :

(i) Accessing file in VB

(ii) Interface with windows.

Reg. No. : ....

**Code No..: 20103 E   Sub. Code : SMCS 52/
SMSE 52/AMCS 52**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Fifth Semester

Computer Science/Software Engineering – Core

DATA COMMUNICATION AND
COMPUTER NETWORK

(For those who joined in July 2017 onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Transmission data rate is decided by

    (a) network layer   (b) physical layer

    (c) data link layer   (d) transport layer

2. The ———— duplex mode, the signal is sent in both directions at the same time.

    (a) Half

    (b) Simple

    (c) Full

    (d) None of the mentioned

3. Coaxial cable has conductors with ————

    (a) a common axis   (b) equal resistance

    (c) the same diameter   (d) none of these

4. The physical layer is responsible for

    (a) line coding   (b) channel coding

    (c) modulation   (d) all of the mentioned

5. Which of the following is not a phase of virtual circuit network?

    (a) Setup phase   (b) Data transfer phase

    (c) Termination phase   (d) Teardown phase

6. The signal rate is the number signal elements sent in ————s.

    (a) 1   (b) 2

    (c) 0   (d) 4

7. The data link layer takes the packets from ———— and encapsulates them into frames for transmissions.

   (a) network layer   (b) physical layer

   (c) transport layer   (d) application layer

8. Which one of the following is a data link protocol?

   (a) ethernet

   (b) point to point protocol

   (c) hdlc

   (d) all of the mentioned

9. In wireless ad-hoc network

   (a) access point is not required

   (b) access point is must

   (c) nodes are not required

   (d) none of the mentioned

10. Which multiple access technique is used by IEEE 802.11 standard for wireless LAN?

   (a) CDMA

   (b) CSMA/CA

   (c) ALOHA

   (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) Write about the addressing.

   Or

   (b) Why are protocols and standards needed?

12. (a) What does the Nyquist theorem have to do with communication?

   Or

   (b) Write in detail about time and frequency domains.

13. (a) Explain about packet switch network.

   Or

   (b) What is dial-up modem technology?

14. (a) Explain stop and wait protocol.

   Or

   (b) What is hamming distance?

15. (a) Explain IEEE 802.11 architecture.

Or

(b) What is the minimum size of a UDP datagram?

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 OSI layers with neat diagram.

Or

(b) What is an internet? What is an intranet?

17. (a) What does the Shannon capacity have to do with communications?

Or

(b) With neat diagram explain about Guided media.

18. (a) List four major components of a packet switch and their functions.

Or

(b) What is LATA? What are intra-LATA and inter-LATA services?

19. (a) What kind of error is undetectable by checksum?

Or

(b) Discuss the concept of redundancy in error detection.

20. (a) Write in details about Sliding window protocols.

Or

(b) Explain in details about need of IPv6.

———————

Reg. No. : ....

de No. : 30382 E   Sub. Code : SMCS 61/
SMSE 61

ɜc. (CBCS) DEGREE EXAMINATION, APRIL 2022

Sixth Semester

Computer Science/Software Engineering — Core

OPERATING SYSTEM

(For those who joined in July 2017 onwards)

e : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

The basic unit of computer storage is the ————
—

(a)   bit   (b)   byte

(c)   word   (d)   kilobyte

———————— is an example of an open-source
bootstrap program for Linux system.

(a)   GRUB   (b)   SYSGEN

(c)   EPROM   (d)   ROM

3.   A ———————— is defined as an endpoint for
communication.

(a)   Port   (b)   TCP

(c)   UDP   (d)   Socket

4.   ———————— scheduling dynamically assigns
priorities according to deadline.

(a)   Priority based

(b)   Rate monotonic

(c)   Earliest deadline first

(d)   Proportional share

5.   A classic software – based solution to the critical –
section problem known as ————————

(a)   Non preemptive kernels

(b)   Preemptive kernels

(c)   Peterson's solution

(d)   Locking

6.   One lock-order verifier, which works on BSD
versions of UNIX such as FreeBSD, is known as
————————

(a)   Witness   (b)   Claim edge

(c)   Safe sequence   (d)   Wait-for

ʾhe percentage of times that the page number of
nterest is found in the TLB is called the ————————

a)   Miss Ratio   (b)   Hit Ratio

c)   Valid Bit   (d)   Invalid Bit

Ve evaluate an algorithm by running it on a
ıarticular string of memory references and
omputing the number of page faults. The string of
nemory references is called a ————————

a)   Reference string   (b)   Modify bit

c)   Victim frame   (d)   Pool

ʌn ———————— is a series of code sections that the
ɔader can bring into memory and execute.

a)   Text file   (b)   Source file

c)   Executable file   (d)   Data file

ʾo increase efficiency , most file systems group
ɔlocks together into larger chunks, frequently
ɑlled ————————

a)   BootStrap   (b)   Partition

c)   Clusters   (d)   Raw Disk

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11.   (a)   Explain about the structure of operating
system.

Or

(b)   Write about system boot.

12.   (a)   Explain about scheduling queues.

Or

(b)   Explain about multilevel queue scheduling.

13.   (a)   Explain about semaphore usage.

Or

(b)   Write about resource preemption.

14.   (a)   Explain about logical versus physical
address space.

Or

(b)   Write short notes on page – fault frequency.

15. (a) Write short notes of directory implementation.

Or

(b) Write short notes on magnetic tapes.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Explain about operating system operation.

Or

(b) Explain about operation system design and implementation.

17. (a) Explain about communication in client – server systems.

Or

(b) Explain about thread scheduling.

18. (a) Explain about the readers – writers problem.

Or

(b) Explain about Banker's algorithm.

19. (a) Explain about paging hardware with TLB.

Or

(b) Consider the following page reference string :

7, 2, 3, 1, 2, 5, 3, 4, 6, 7, 7, 1, 0, 5, 4, 6, 2, 3, 0, 1.

Assuming demand paging with three frames, how many page faults would occur for the following replacement algorithms?

- LRU replacement
- FIFO replacement
- Optimal replacement.

20. (a) Explain about indexed allocation.

Or

(b) Explain about SCAN and C-SCAN scheduling.

———————

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

Code No. : 20105 E   Sub. Code : SMCS 61/
**   SMSE 61**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Sixth Semester

Computer Science/Software Engineering — Core

OPERATING SYSTEM

(For those who joined in July 2017 onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. General-purpose computers run most of their programs from rewritable memory, called ———

    (a) main memory   (b) secondary memory

    (c) cache memory   (d) none of these

2. The system must be able to load a program into memory and to run that program

    (a) User interface

    (b) File-system manipulation

    (c) Program execution

    (d) I/O operations

3. A process is

    (a) program in high level language kept on a disk

    (b) contents of main memory

    (c) a program in execution

    (d) a job in secondary memory

4. ——— processes contain logic for rendering web pages.

    (a) Renderer   (b) Plug-in

    (c) Browser   (d) Sand box

5. Process synchronization can be done on

    (a) Hardware level

    (b) Software level

    (c) Both (a) and (b)

    (d) None of the mentioned

Page 2   Code No. : 20105 E

6. A monitor is module that encapsulates

    (a) shared data structures

    (b) procedures that operates on shared data structures

    (c) synchronization between concurrent procedure invocation

    (d) all of the above

7. A solution to the problem of external fragmentation is ———

    (a) Compaction

    (b) Large memory space

    (c) Smaller memory space

    (d) Medium memory space

8. Logical memory is broken into blocks of the same size called ———

    (a) Frames   (b) Pages

    (c) Backing stores (d) Page table

9. Contiguous allocation of a file is defined by

    (a) disk address of the first block and length

    (b) length and size of the block

    (c) size of the block

    (d) total size of the file

10. The time taken to move the disk arm to the desired cylinder is called the

    (a) positioning time   (b) random access time

    (c) seek time   (d) latency time

PART B — (5 × 5 = 25 marks)

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

11. (a) Write short notes on system boot.

    Or

    (b) Determine the multiprocessor system and its advantages.

12. (a) Write about process control block with neat diagram.

    Or

    (b) Explain the following :

        (i) Priority-based scheduling

        (ii) Rate-monotonic scheduling.

13. (a) How to implement a monitor using semaphores?

    Or.

    (b) Discuss the methods for handling deadlock.

Page 3   Code No. : 20105 E

Page 4   Code No. : 20105 E
                                    [P.T.O.]

14. (a) Write short notes on fragmentation.

Or

(b) Justify about virtual memory.

15. (a) Describe the disk structure.

Or

(b) Clarify about tree structured directories.

PART C — (5 × 8 = 40 marks)

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

16. (a) Analyze the computer system organization.

Or

(b) Illustrate the various operating system operations.

17. (a) Demonstrate the interprocess communication.

Or

(b) Explain in detail about any three CPU scheduling algorithm.

18. (a) Determine the classic problem of synchronization.

Or

(b) Discuss in detail about the deadlock detection and recovery.

19. (a) Define trashing. Write the causes of trashing.

Or

(b) Explain the following :

(i) Basic concepts of page replacement

(ii) FIFO page replacement.

20. (a) Describe about file concept.

Or

(b) Elucidate the allocation methods in file implementation.

_____

Reg. No. : ....

Code No. : 20106 E   Sub. Code : SMCS 62/
                                   SMSE 62

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Sixth Semester

Computer Science/Software Engineering – Core

COMPUTER GRAPHICS AND VISUALIZATION

(For those who joined in July 2017 onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. CAD stands for

   (a) Computer Art Design

   (b) Computer-Aided Design

   (c) Car Art Design

   (d) None of the above

2. From the given list of options, which one is the accurate and efficient line-generating algorithm

   (a) Midpoint algorithm

   (b) DDA algorithm

   (c) Bresenham's Line algorithm

   (d) None of the above

3. Aspect ratio means

   (a) Number of pixels

   (b) Ratio of vertical points to horizontal points

   (c) Ratio of horizontal points to vertical points

   (d) Both (b) and (c)

4. Which one is the rigid body transformation that moves object without deformation?

   (a) Translation   (b) Scaling

   (c) Rotation   (d) Shearing

5. Coordinates of viewport are known as ————

   (a) World coordinates

   (b) Polar coordinates

   (c) Screen coordinates

   (d) Cartesian coordinates

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

   (a) transformation   (b) projection

   (c) clipping   (d) mapping

7. The process of displaying 3D into a 2D display unit is called as ————

   (a) Resolution   (b) Projection

   (c) Rasterization   (d) Transformation

8. 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

9. ———— and ———— are two types of transformations.

   (a) Quadratic, cubic   (b) Variable, affine

   (c) Linear, quadratic   (d) Linear, affine

10. 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

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 short note on the following video display (i) refresh CRT (ii) color CRT.

    Or

    (b) Compare and contrast between raster scan display and random scan display.

12. (a) Explain the two dimensional translation and scaling with example.

    Or

    (b) Give a short note on rotation.

13. (a) Explain the window to viewport coordinate transformation.

Or

(b) Explain the various clipping operations.

14. (a) Write short notes on 3D rotation.

Or

(b) Explain about three dimensional display methods.

15. (a) Write a note on the following visible surface detection methods (i) Back face detection (ii) A-buffer method.

Or

(b) Discuss about scan line method.

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 various input devices.

Or

(b) Explain the Bresenham's line drawing algorithm with example.

Page 5   Code No. : 20106 E

17. (a) Explain the basic two-dimensional geometric transformation.

Or

(b) Obtain a transformation matrix for rotating an object about a specified pivot point.

18. (a) Illustrate Cohen-Sutherland line clipping algoirthm.

Or

(b) Explain Sutherland-Hodgeman polygon clipping algorithm.

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

Or

(b) Write a detailed note on interactive input methods.

20. (a) Elaborate in detail about 3D projection.

Or

(b) Discuss about three dimensional viewing.

_____

Page 6   Code No. : 20106 E

c. (CBCS) DEGREE EXAMINATION, APRIL 2022

Sixth Semester

Computer Science — Core

DATA WAREHOUSING AND DATA MINING

(For those who joined in July 2017 onwards)

e : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

Data warehouse architecture is based on ————

(a) DBMS   (b) RDBMS

(c) Sybase   (d) SQL server

A crucial area of data warehousing is ————,
which is a kind of data that describes the data
warehouse itself.

(a) Data Mart   (b) Metadata

(c) Data mining   (d) Query

3. The ———— is a virtually free resource, which
provides a universal connectivity within and
between companies.

(a) Webpage   (b) Internet

(c) Message   (d) Network

4. The process of viewing the cross-tab (single
dimensional) with a fixed value of one attribute is

(a) Slicing   (b) Dicing

(c) Pivoting   (d) Both (a) and (b)

5. ———— is a summarization of the general
characteristics of features of a target class of data.

(a) Data characterization

(b) Data discrimination

(c) Constrasting classes

(d) None of these

6. Which of the following is not involved in data
mining?

(a) Knowledge extraction

(b) Data archaeology

(c) Data exploration

(d) Data transformation

Page 2   Code No. : 30384 E

Classification rules are extracted from ————

(a) Root node   (b) Decision tree

(c) Siblings   (d) Branches

———— are well suited for the mining of
multidimensional association rules.

(a) Data cubes   (b) Clustering

(c) Statistical   (d) Nominal

A divisive hierarchical clustering method employs
a ———— strategy.

(a) bottom-up   (b) top-down

(c) structural   (d) procedural

———— is the process of grouping a set of data
objects into multiple groups.

(a) Clustering   (b) Prediction

(c) Association   (d) Correlation

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

(a) Determine the data warehouse
administration and management.

Or

(b) Describe the intangible benefits of data
warehouse.

Page 3   Code No. : 30384 E

12. (a) Write short on needs of OLAP.

Or

(b) Explain the business analysis tool categories.

13. (a) Give an account of classification of data
mining system.

Or

(b) Write short notes on data smoothing
techniques.

14. (a) Describe on IF-THEN rules for classification.

Or

(b) Conclude the issues regarding to
classification and prediction.

15. (a) Compare supervised vs unsupervised
learning.

Or

(b) Explain the various data mining
applications.

Page 4   Code No. : 30384 E

[P.T.O]

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Summarize about information Delivery System.

Or

(b) Write a brief notes on metadata.

17. (a) Explain in detailed about managed query environment.

Or

(b) Define OLAP. Categorize the various OLAP tools.

18. (a) Write brief notes on major issues in data mining.

Or

(b) Illustrate about data transformation in data mining.

19. (a) Criticize the classification by back propagation.

Or

(b) Elucidate the decision tree induction in classification.

20. (a) Discuss k-means-a centroid-based techniques.

Or

(b) Enumerate the values of density-based clustering methods.

(6 pages)

Reg. No. : ....

Code No. : 20107 E   Sub. Code : SMCS 63

B.Sc. (CBCS) DEGREE SPECIAL SUPPLEMENTARY
EXAMINATION, NOVEMBER 2022.

Sixth Semester

Computer Science — Core

DATA WAREHOUSING AND DATA MINING

(For those who joined in July 2017 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 features usually applies to data in a data warehouse?

    (a)   Data are often deleted

    (b)   Data are rarely deleted

    (c)   Most applns consists of transactions

    (d)   Relatively few records are processed by appln.

2. OLPA stands for

    (a)   Online Analytical Processing

    (b)   Online Analysis Processing

    (c)   Online Transaction Processing

    (d)   Online Aggregated Processing

3. Data that can be modeled as dimensional attributes and measure attributes are called _____ data.

    (a)   Measured   (b)   Single dimensional

    (c)   Dimensional   (d)   Multi dimensional

4. Give the rule of the form IF X THEN Y rule confidence in defined as a conditional probability that select one

    (a)   Y is false when X is known to be false

    (b)   Y is true when X is known to be true

    (c)   X is false when Y is known to be true

    (d)   X is true when Y is known to be false

5. _____ maps data into subsets with associated simple description.

    (a)   Clustering   (b)   Regression

    (c)   Classification   (d)   Summarisation

Page 2   Code No. : 20107 E

6. Deep knowledge can be found only by using _____.

    (a)   Clues   (b)   OLAP

    (c)   OLTP   (d)   Algorithm

7. Which of the following is not data mining s/w?

    (a)   SPSS   (b)   Darwin

    (c)   Mantas   (d)   CART

8. The association rule notation is _____ used for transition in D

    (a)   L   (b) t_n

    (c) $x \Rightarrow y$ (d) L^2

9. The _____ for an association rule $x \Rightarrow y$ is the ratio of the number of transactions that contain $x \cup y$ to the no. of transaction that contain x.

    (a)   Support

    (b)   Confidence

    (c)   Support and Confidence

    (d)   None

10. Expansion of DBSCAN is

    (a)   Data based special clustering of appln with noise

    (b)   Density based spatial clustering of appln with noise.

    (c)   Density based domain without noise

    (d)   Domain based spacial noise.

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a)   Differentiate between Data mining and Data warehousing.

Or

    (b)   (i)   Define OLAP

          (ii) Characteristics of OLAP.

12. (a)   What are the types of metadata that is maintained in data warehousing?

Or

    (b)   Explain the taxonomy of datamining tasks.

Page 3   Code No. : 20107 E

Page 4   Code No. : 20107 E
[P.T.O.]

13. (a) Write short notes on system process.

Or

(b) Write short notes on Association Rule.

14. (a) Explain decision tree.

Or

(b) Explain frequent item sets with example.

15. (a) What do you mean by rule based algorithm?

Or

(b) Name the areas of applns of datamining used.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Define support and confidence. Explain with example.

Or

(b) Explain various steps in data pre-processing.

Page 5   Code No. : 20107 E

17. (a) Give an example for Apriori with transitions and explain it in detail.

Or

(b) Briefly explain about Naïve Baysian theorem.

18. (a) Explain the process architecture with neat diagram.

Or

(b) Write short notes on :

(i) N/W topology

(ii) Linear regression.

19. (a) Explain Agglomerative algorithm.

Or

(b) What is the purpose of cluster analysis in data warehousing.

20. (a) Discuss about partitioning.

Or

(b) Explain different data types used in cluster analysis.

Page 6   Code No. : 20107 E

Øde No. : 30395 E   Sub. Code : SNCS 4 A/
                      SNSE 4 A/ ANCS 41 /
                      ANSE 41

৮. (CBCS). DEGREE EXAMINATION, APRIL 2022.

Fourth Semester

Computer Science / Software Engineering

Non Major Elective — HTML

(For those who joined in July 2017 onwards)

┘ne : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

HTML stands for?

(a)   Hyper Text Markup Language

(b)   High Text Markup Language

(c)   Hyper Tabular Markup Language

(d)   High Text Making Language

2.   www is based on which model?

(a)   Local Server   (b)   Client Server

(c)   3-tier   (d)   2-tier

3.   _____ HTML tag is used for the largest heading.

(a)   <head>   (b)   <h6>

(c)   <heading>   (d)   <h1>

4.   From which tag descriptive list starts?

(a)   <LL>   (b)   <DD>

(c)   <DL>   (d)   <DS>

5.   Web pages starts with which of the following tag?

(a)   <Body>   (b)   <tilte>

(c)   <HTML>   (d)   <Form>

6.   ALL HTML tags are enclosed with

(a)   < >   (b)   # #

(c)   < ## >   (d)   ? ?

Page 2   Code No. : 30395 E

_____ is tag used to represent row of a table

،a)   <TT>   (b)   <TH>

،c)   <TR>   (d)   <TROW>

Main container for <TR>, <TD> and <TH> is

a)   <Table>   (b)   <Group>

c)   <Data>   (d)   All of these

The body tag usually used after

a)   title tag   (b)   head tag

c)   EM tag   (d)   Form tag

ᴐHTML enable a web page to be

ᴉ)   more interactive   (b)   Server interactive

c)   client interactive (d)   Dynamic

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

ᴉ)   Write short notes on HTML generations.

Or

ᴑ)   Mention the Structure of HTML Program

12.   (a)   Discuss about Header Section.

Or

(b)   Mention the Various Image Formats, in HTML

13.   (a)   Discuss about Ordered List

Or

(b)   How to Colour cells in Table? - Explain

14.   (a)   Explain Pixel and Percentage Unit in Frame Set.

Or

(b)   Write a code to split the web page into three column wise Frames.

15.   (a)   State the Features of dynamic HTML

Or

(b)   How to define and Link the Styles to an HTML Document?

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Describe about the Hyper Links in HTML

Or

(b) Write a sample code to design your resume.

17. (a) Write detail notes on Tab Setting in HTML

Or

(b) Discuss about formatting of Characters in HTML

18. (a) Describe about Ordered List with suitable examples.

Or

(b) Write an essay on Tables in HTML

19. (a) Discuss about Frames and its attributes.

Or

(b) Write a sample code to design College web page using Frames.

20. (a) What are Multiple Styles? – Illustrate with suitable examples.

Or

Discuss about External Style Sheets.

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

Code No. : 20118 E   Sub. Code : SNCS 4 A/
SNSE 4 A/ANCS 41/
ANSE 41

U.G. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Fourth Semester

Computer Science/Software Engineering

Non Major Elective — HTML

(For those who joined in July 2017 onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. HTML stands for?

   (a) Hyper Text Markup Language

   (b) High Text Markup Language

   (c) Hyper Tabular Markup Language

   (d) None of these

2. A linked page using anchor tag is normally displayed in the ——————.

   (a) New tab   (b) Current window

   (c) New window   (d) None of these

3. Each cell of the table can be represented by using

   (a) <tr>   (b) <th>

   (c) <thead>   (d) <td>

4. Which of the following tag is used to make a beginning of paragraph?

   (a) <td>   (b)

   (c) <p>   (d) <tr>

5. How can you make a ordered list?

   (a) <dl>   (b)

   (c)   (d) <list>

6. Which property tells how many rows a cell should span?

   (a) colspan=n   (c) rowspan=n

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

7. —————— is not a types of screen frames in HTML.

   (a) iframe   (b) noframe

   (c) frameset   (d) uframe

Page 2   Code No. : 20118 E

8. Which HTML element is used to define a multi-line input field?

    (a) <text>   (b) <textarea>

    (c) <blocktext>   (d) <textfields>

9. DHTML is the combination of

    (a) HTML, Javascript and CSS

    (b) XML and HTML

    (c) XHTML and HTML

    (d) HTML and CSS

10. What is the inline style used for?

    (a) To apply style to all pages

    (b) To applying a unique style to a single HTML element

    (c) To define a common style for all HTML element on a page

    (d) All 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) Give a brief note on HTML.

        Or

    (b) What is an anchor tag? Explain with example.

12. (a) Narrate on Title section.

        Or

    (b) Create a webpage with an image.

13. (a) Explain ordered list with example.

        Or

    (b) Write a short note on column specification.

14. (a) What is the use of frames in HTML.

        Or

    (b) Explain briefly on action attributes.

15. (a) What is DHTML? Explain briefly the basic concepts of DHTML.

Or

(b) Interpret Inline styles.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Discuss hyperlinks with examples.

Or

(b) Narrate on the history of HTML.

17. (a) Describe the header section with example.

Or

(b) Explain the following.
   (i) Aligning the heading.
   (ii) Paragraph tag.

18. (a) Create a webpage using an unordered list.

Or

(b) Discuss table creation in HTML.

19. (a) Create a webpage with nested frames.

Or

(b) What is form? Explain the creation of forms.

20. (a) Interpret elements of styles in DHTML.

Or

(b) Explain Internal and External style sheets.

————

ges)

Reg. No. : ....

ne No. : 5721   Sub. Code : ZCSE 22

. (CBCS) DEGREE EXAMINATION, APRIL 2022

Second Semester

Computer Science

Elective — DATA MINING

(For those who joined in July 2021 onwards)

: Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

Data mining often requires ————— the
merging of data from multiple data stores.

a) Data cleaning

b) Data integration

c) Data transformation

d) Data reduction

2. Which of the following is not involve in data mining?

(a) Knowledge Extraction

(b) Data Archaeology

(c) Data Exploration

(d) Data Transformation

3. ————— allows data to be modeled and viewed in multiple dimensions.

(a) Data cube   (b) Fact table

(c) Dimension table (d) Apex cuboid

4. ————— association rules can be mined efficiently using concept hierarchies under a support-confidence framework.

(a) Multilevel   (b) Multidimensional

(c) Rare patterns   (d) Quantitative

5. How many steps data classification consists of ?

(a) 2   (b) 3

(c) 5   (d) 4

6. Classification is —————

(a) A subdivision of a set of examples into a number of classes

(b) A measure of accuracy of classification of a concept that is given by certain theory

(c) The task of assigning a classification to a set

(d) None of these

Clustering is known as ————— because the class label information is not present.

a) data segmentation

b) automatic

c) outlier

d) unsupervised learning

n ————— hierarchical clustering method uses bottom-up strategy.

a) Divisive   (b) Agglomerative

c) Multiple-phase   (d) Single-linkage

————— method does not contain any information about shape, image topology, or xture.

) Color histogram-based signature

) Multifeature composed signature

) Wavelet-based signature

) Wavelet-based signature with region-based granularity

————— is a subfield of data mining that is used find interesting information of implicit knowledge from multimedia databases.

) Text mining

) Web mining

) Multimedia mining

) Spatial mining

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Write short notes on data mining concept.

Or

(b) What is data preprocessing? Why to preprocess the data?

12. (a) Discuss about market basket analysis with an example.

Or

(b) Criticize the concept of Apriori algorithm.

13. (a) Determine the terms tree pruning in decision tree.

Or

(b) Describe on IF-THEN rules for classification.

14. (a) Compare the difference between agglomerative versus divisive hierarchical clustering.

Or

(b) Discuss k-Means-a centroid-based techniques.

15. (a) Explain the various types of data mining applications.

Or

(b) Write short notes on text indexing and query indexing techniques.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Write brief notes on major issues in data mining.

Or

(b) Explain how to integrate your data in data mining.

17. (a) Draw and explain the data warehouse multitier architecture.

Or

(b) Explain how to mining the data using various kinds of association rules.

18. (a) Write detail notes on Bayesian classification methods.

Or

(b) Criticize the concept of rule-based classification.

Code No. : 5721

19. (a) Elucidate the terms of cluster analysis with an example.

Or

(b) Describe about hierarchical clustering methods.

20. (a) Explain in detailed about different types text mining approaches.

Or

(b) What is multimedia database? Examine the classification and prediction analysis of multimedia data.

———————

Code No. : 5721

(6 pages)

Reg. No. : ....

Code No. : 6445   Sub. Code : ZCSE 22

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Second Semester

Computer Science - Core

Elective — DATA MINING

(For those who joined in July 2021 onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. ———————— are designed to overcome any
    limitations placed on the warehouse by the nature
    of the relational data model.

    (a) Operational data base

    (b) Relational database

    (c) Multidimensional data base

    (d) Data repository

2. Which of the following is the collection of data
    objects that are similar to one another within the
    same group?

    (a) Partitioning   (b) Grid

    (c) Cluster   (d) Table

3. Which of the following process includes data
    cleaning, data integration, data selection, data
    transformation, data mining, pattern evolution
    and knowledge presentation?

    (a) KDD process   (b) ETL process

    (c) KTL process   (d) MDX process

4. Data modeling technique used for data marts is

    (a) Dimensional modeling

    (b) ER-model

    (c) Extended ER-model

    (d) Physical model

5. An OLAP tool provides for

    (a) Multi dimensional analysis

    (b) Roll-up and drill-down

    (c) Slicing and dicing

    (d) Rotation

6. The synonym for data mining is
   (a) data warehouse
   (b) knowledge discovery in data base
   (c) ETL
   (d) Business intelligence

7. Most common kind of queries in a data warehouse
   (a) Inside-out queries
   (b) Outside-in queries
   (c) Browse queries
   (d) Range queries

8. Which of the following form the set of data created to support a specific short lived business situation?
   (a) Personal data marts
   (b) Application models
   (c) Downstream systems
   (d) Disposable data marts

9. Which of the following tools a business intelligence system will have?
   (a) OLAP tool   (b) Data mining tool
   (c) Reporting tool   (d) Control tool

10. Metadata describes
    (a) contents of data base
    (b) Structure of contents of data base
    (c) structure of data base
    (d) data base itself

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 data cube aggregation.

    Or

    (b) Explain the data integration and data transformation.

12. (a) Summarize the steps to generate association rules from frequent itemsets.

    Or

    (b) What are the various kinds of association rules? Describe.

13. (a) How decision tree induction is used in classification?

    Or

    (b) How does a Bayesian belief network learn? Describe.

14. (a) What are describe features of cluster analysis? Explain.

Or

(b) Describe the methods of model-based clustering.

15. (a) Elaborate the trends in data mining.

Or

(b) What kinds of association can be mined in multimedia data? 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 architecture of a typical data mining systems.

Or

(b) Explain the classification of data mining systems.

17. (a) Examine the steps involved for the design and construction of data warehouse.

Or

(b) How is Apiori Algorithm used to find frequent Itemsets? Explain.

18. (a) Outline the use of IF-THEN rules for classification.

Or

(b) Evaluate the k-Nearest-Neighbor classifiers with neat diagram.

19. (a) Illustrate the implementation of partitioned methods in cluster analysis.

Or

(b) Draw and explain the statistical distribution-based outlier detection.

20. (a) Elaborate the text data analysis and information retrieval.

Or

(b) Determine the need of mining the World Wide Web.

————

(6 pages)

Reg. No. : ....

Code No. : 6451   Sub. Code : ZCSE 31

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Third Semester

Computer Science

Elective — CLOUD COMPUTING

(For those who joined in July 2021 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 an example of the cloud?
    (a) AWS   (b) Drop box
    (c) Cisco WebEx (d) All of the above

2. On what is cloud computing based?
    (a) Modulation   (b) Hybridization
    (c) Virtualization (d) Multiplexing

3. What is allow the users OS to be remotely stored on a server?
    (a) Storage   (b) Desktop
    (c) Server   (d) Network

4. What is used to remote access from server in virtualization?
    (a) Application (b) Network
    (c) Desktop   (d) Storage

5. Which of the following option is the IaaS service provider?
    (a) EC1   (b) EC2
    (c) EC10   (d) Hybrid

6. What is the highest degree of integration in cloud computing?
    (a) AaaS   (b) SaaS
    (c) PaaS   (d) CaaS

7. Which is trust computing base?

   (a) VM   (b) Software

   (c) Hardware   (d) Storage

8. Which of the following system does not provision storage to most user?

   (a) PaaS   (b) IaaS

   (c) CaaS   (d) SaaS

9. Which is convert one set of data to another data?

   (a) Map   (b) Reduce

   (c) Virtual box   (d) GAE

10. Which is interacts with the cloud coordination?

    (a) Cloud broker   (b) Cloud coordinator

    (c) Cloud exchange   (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) Examine the cloud computing.

Or

    (b) Explain the elasticity in cloud.

12. (a) Summarize the virtualization in cloud computing.

Or

    (b) Predict the full virtualization.

13. (a) Explain the public clouds.

Or

    (b) Explain the hybrid clouds.

14. (a) Write about the demand driven resource provisioning.

Or

    (b) Determine the software as a security.

15. (a) Appraise the architecture of map reduce in Hadoop.

Or

    (b) Summarize the open stack.

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

16. (a) Explain the parallel computing in cloud computing.

Or

(b) State the on demand provisioning.

17. (a) Summarize the implementation level of virtualization.

Or

(b) Justify the memory virtualization.

18. (a) Illustrate the SaaS.

Or

(b) Explain the NIST cloud computing reference architecture.

19. (a) Illustrate the global exchange of cloud resources.

Or

(b) Determine the virtual machine security.

20. (a) Summarize the open stack compute.

Or

(b) Justify the running job in Hadoop.

—————

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Briefly explain .NET Programming Framework.

Or

(b) How is IIS installed?

17. (a) Explain web form inheritance.

Or

(b) Give the Page Life Cycle.

18. (a) Briefly explain simple data access and simple data update.

Or

(b) Write XML rules that are not found in ordinary HTML.

19. (a) Briefly explain the Web Service Communication with a neat diagram.

Or

(b) Briefly explain how to document WebService.

20. (a) Briefly explain with a flowchart how Authenticating a request is done.

Or

(b) What are Form Authentication Settings? Give a brief description.

Page 4   Code No. : 6440

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which is a group of related constants?
   (a) Variable
   (b) Enumeration
   (c) Enumerator
   (d) String

2. Which is defined on a class-by-class basis?
   (a) Encapsulation
   (b) Inheritance
   (c) Abstraction
   (d) Accessibility

3. Which collection includes all the controls on the current web forms?
   (a) Page.Controls
   (b) Page.collection
   (c) Web.controls
   (d) Web.collection

4. Which is used to log unexpected conditions or errors?

   (a) Cache   (b) Exception handler

   (c) Event Logging   (d) Error handler

5. Which is used to get information out of a database and into a page quickly?

   (a) Repeater   (b) DataReader

   (c) Datalist   (d) DataBinding

6. From which class does the Datagrid inherit basic functionality? Class?

   (a) BaseDataList   (b) Datalist

   (c) BaseList   (d) Repeater

7. Which is the way to encode information beforesending it to a Web service?

   (a) WSDL   (b) SOAP

   (c) DISCO   (d) UDDI

8. What does m indicate in .asmx file?

   (a) main   (b) mail

   (c) member   (d) method

9. Hosting multiple servers is called ————

   (a) Farm   (b) Garden

   (c) Servlet   (d) Web garden

10. Which allows to package functionality into succinct and reusable chunks with well-defined interfaces?

   (a) Com components   (b) Terra service

   (c) Data caching   (d) Profiling

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 The Common Language Runtime

Or

   (b) Write a note on .net namespaces.

12. (a) Give a brief description of ASP.NET file types.

Or

   (b) What are the three ways to code web forms?

13. (a) How is a connection to the data source created?

Or

   (b) Write a note on Single-value Data Binding.

14. (a) Write a note on Dynamic Discovery.

Or

   (b) What are the Web Service Data Types?

15. (a) Write a note on User controls.

Or

   (b) Write a note on SSL.

s)

Reg. No. : ....

(CBCS) DEGREE EXAMINATION, APRIL 2022

Second Semester

Computer Science — Core

MACHINE LEARNING

For those who joined in July 2021 onwards)

Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

Machine learning methods are sometimes called ————— because no symbols or symbolic manipulation are involved.

    (a)   symbolic   (b)   subsymbolic

    (c)   reasoning   (d)   logical

How many input point the XOR function has?

    (a)   3   (b)   4

    (c)   5   (d)   6

3.   What is perceptron?

    (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.   Which one of the following is the most popular algorithm in modern machine learning?

    (a)   Support Vector Machine

    (b)   Regression

    (c)   Correlation

    (d)   None

5.   Decision nodes are represented by —————

    (a)   Disks   (b)   Squares

    (c)   Circles   (d)   Triangles

6.   The ————— algorithm computes the information gain for each feature and chooses the one that produces the highest value.

    (a)   Quick aside   (b)   ID3

    (c)   k-nearest   (d)   classification

The most popular way to describe bind source separation is known as the —————

    (a)   PCA

    (b)   LDA

    (c)   ICA

    (d)   Cocktail party problem

————— algorithms perform both exploitation and exploration, so that they can make incremental improvements to current good solutions.

    (a)   Genetic   (b)   Correlation

    (c)   Decision tree   (d)   Statistics

The basis of all of the sampling methods is in the generation of ————— numbers.

    (a)   random   (b)   whole

    (c)   natural   (d)   prime

————— principle states that if you take independent and identically distributed from an unknown high-dimensional distribution p(x), then as the number of samples gets larger the sample distribution will converge to the true distribution.

    (a)   Monte Carlo

    (b)   Bayesian network

    (c)   Ensemble learning

    (d)   None of these

PART B — (5 × 5 = 25 marks)

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

11.   (a)   Write the various types of machine learning.

Or

      (b)   Discuss about the perceptron Learning Algorithm.

12.   (a)   Clarify about the going forward in multi layer perceptron.

Or

      (b)   How to choosing the suitable kernel for support vector machine?

13.   (a)   Mention variety of ways to using decision tree.

Or

      (b)   Write the different ways to combine the classifier.

14.   (a)   Comment about on Linear Discriminant Analysis.

Or

      (b)   Interpret about the terms of Reinforcement Learning.

15. (a) Write short notes on variable elimination algorithm.

Or

(b) Describe the Markov Random Fields and its usage.

PART C — (5 × 8 = 40 marks)

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

16. (a) Explain in detail about the brain and neuron.

Or

(b) Write brief notes on linear separability. What does the perceptron actually compute?

17. (a) Summarize how to deriving the Back Propagation.

Or

(b) Clarify about optimal separation in support vector machine.

18. (a) Evaluate the The k-means Neural Network with suitable example.

Or

(b) Analyze about self organizing Feature Map algorithm and neighborhood connections.

Page 5   **Code No. : 5717**

19. (a) Examine brief notes on principal component analysis.

Or

(b) Write detailed notes on genetic algorithm. How to represent the string and evaluating the fitness in genetic algorithm?

20. (a) Explain how to construct the Bayesian Networks.

Or

(b) Evaluate the Hidden Markov Model and its various algorithms.

Page 6   **Code No. : 5717**

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Reg. No. : ....

ue No. : **5718**   Sub. Code : **ZCSM 23**

:. (CBCS) DEGREE EXAMINATION, APRIL 2022

Second Semester

Computer Science — Core

ADVANCED DBMS

(For those who joined in July 2021 onwards)

: Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

——————— is a collection of facts, such as values or measurements.

(a) Data   (b) Information

(c) Things   (d) Items

2. A ——————— is a set of software programs that allows users to create, edit and update data in database files, and store and retrieve data from those database files.

(a) data base

(b) data management system

(c) database management system

(d) office management system

3. A database is a complex ———————

(a) Data structure   (b) Memory

(c) Field   (d) Record

4. The overall description of a database is called ———————

(a) Data definition   (b) Data manipulation

(c) Data integrity   (d) Database schema

5. Retrieval of data is done by using a ———————

(a) Stack   (b) Query

(c) Linked list   (d) All of these

6. SQL stands for ———————

(a) System Query Language

(b) Structured Query Language

(c) Sets Query Languages

(d) None of these

A field that can identify a record uniquely is called as ——————— of the record.

(a) foreign key   (b) super key

(c) primary key   (d) candidate key

——————— command can be used to modify a column in a table.

(a) Alter   (b) Update

(c) Set   (d) Create

A table in RDBMS is also called as ———————

(a) tuple   (b) domain

(c) relation   (d) projection

The number of columns in a table is its ———————

(a) degree   (b) cardinality

(c) relation   (d) tuple

PART B — (5 × 5 = 25 marks)

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

(a) Write down the need for entity-relationship model.

Or

(b) Point out the features of good relational design.

12. (a) Distinguish between the static and dynamic hashing techniques.

Or

(b) What are transaction isolation levels in DBMS? Explain.

13. (a) Describe the advantages of lock based protocols.

Or

(b) Elaborate the purpose of buffer management.

14. (a) Write down the functions of parallel systems.

Or

(b) Summarize the distributed transaction with example.

15. (a) Describe the structure of XML data.

Or

(b) Explain the array and multiset types in object based databases.

PART C — (5 × 8 = 40 marks)

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

16. (a) Compare the third normal form and fourth normal form.

Or

(b) Construct an E-R diagram for a hospital with a set of patients and a set of medical doctors.

17. (a) Illustrate the serializability in transaction management.

Or

(b) Examine the ordered indexing and hashing with example.

18. (a) What is a deadlock? How are deadlocks handled? Explain.

Or

(b) Discuss the implementation of validation based protocols.

19. (a) Compare the homogenesous and heterogeneous databases.

Or

(b) Draw and explain the architectures of server system.

20. (a) Evaluate the structured types and inheritance in object based databases.

Or

(b) Outline the storage of XML data with simple example.

(6 pages)

Reg. No. : ....

Code No. : 6442   Sub. Code : ZCSM 23

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Second Semester

Computer Science — Core

ADVANCED DBMS

(For those who joined in July 2021 onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. An ————— is a "thing" or "object" in the real world that is distinguishable from all other objects
   - (a) entity
   - (b) entity set
   - (c) attributes
   - (d) value

2. Which of the following shape is represent relationship sets?
   - (a) Diamonds
   - (b) Lines
   - (c) Rectangle
   - (d) Dashed Lines

3. The bucket to which a value is assigned is determined by a function called a
   - (a) ordered indices
   - (b) primary indices
   - (c) hash function
   - (d) secondary indices

4. ————— indices are a specialized type of index designed for easy querying on multiple keys
   - (a) Dynamic
   - (b) Bitmap
   - (c) Linear
   - (d) Static

5. Cascading roll backs can be avoided by a modification of two-phase locking called the ————— two phase locking protocol
   - (a) rigorous
   - (b) strict
   - (c) lock point
   - (d) growing

6. How many types of errors that may cause a transaction to fail?
   - (a) 2
   - (b) 3
   - (c) 4
   - (d) 5

7. —————— are processes that receive user queries (transactions) execute them, and send the results back

(a) server processes

(b) data base writer

(c) log writer

(d) lock manager

8. Handling larger tasks by increasing the degree of parallelism is called

(a) speed up   (b) linear speed up

(c) scale up   (d) sub linear speed up

9. —————— allow composite attributes of E-R designs to be represented directly

(a) user defined   (b) structured types

(c) row types   (d) column types

10. XML documents must have a single —————— element that encompasses all other elements in the document

(a) child   (b) sub child

(c) root   (d) both (a) and (b)

Page 3   Code No. : 6442

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Write short notes on design phase and design alternatives of data base.

Or

(b) How to represent of strong entity sets with complex attributes?

12. (a) Discuss about the basic concepts of indexing.

Or

(b) Compare the difference between static hashing and dynamic hashing.

13. (a) Interpret about on two-phase locking protocol.

Or

(b) Describe the operating system role in buffer management.

14. (a) Interpret about on client-server system.

Or

(b) Comparison of different types of partitioning techniques.

Page 4   Code No. : 6442

[P.T.O.]

, 15. (a) How to use the table inheritance in SQL give an example.

Or

(b) Write the structure of XML data give 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) Draw and explain the entity-relationship model for college data base.

Or

(b) Summarize about first normal form with an example.

17. (a) Analyze the structure of B+ tree and how to use the queries on B+ trees?

Or

(b) Illustrate about transaction atomicity and durability in data base system.

18. (a) Explain in detail about the various types of failures and storage.

Or

(b) Write the several types of log record. List the step a transaction takes in modifying a data item.

19. (a) Draw and explain the server system architecture in detail.

Or

(b) Evaluate the parallel versions of some common relational operations.

20. (a) Determine about object-identity and reference types in SQL give an example.

Or

(b) Write brief notes on XML document schema with an example.

———————

Reg. No. : ....

Code No. : 5719   Sub. Code : ZCSM 24

Sc. (CBCS) DEGREE EXAMINATION, APRIL 2022

Second Semester

Computer Science — Core

CRYPTOGRAPHY AND NETWORK SECURITY

(For those who joined in July 2021 onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

Which of the following attacks is a passive attack?

(a)   Masquerade

(b)   Modification of message

(c)   Denial of service

(d)   Traffic analysis

2.   A mechanism used to encrypt and decrypt data is _____

(a)   Cryptography   (b)   Algorithm

(c)   Data flow   (d)   None of these

3.   Which one of the following algorithms is not used in asymmetric-key cryptography?

(a)   DSA algorithm

(b)   Electronic code book algorithm

(c)   Diffie-Hellman algorithm

(d)   RSA algorithm

4.   Which is the cryptographic protocol that is used to protect an HTTP connection?

(a)   Resource reservation protocol

(b)   SCTP

(c)   TLS

(d)   ECN

5.   Which of the following cannot be chosen as a key in the Caesar cipher?

(a)   An integer

(b)   An alphabet (A-Z or a-z)

(c)   A string

(d)   None of the above

Which of the following is not possible through has value?

(a)   Password check

(b)   Data integrity check

(c)   Digital signature

(d)   Data retrieval in its original form

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

Which is not an objective of network security?

(a)   identification   (b)   authentication

(c)   access control   (d)   lock

The process of verifying the identify of a user is _____

(a)   authentication   (b)   identification

(c)   validation   (d)   verification

10.   A process of making the encrypted text readable again is _____

(a)   decryption   (b)   encryption

(c)   network security   (d)   information hiding

PART B — (5 × 5 = 25 marks)

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

11.   (a)   Differentiate between the monoalphabetic ciphers and polyalphabetic ciphers.

Or

(b)   Write down the main purpose of steganography.

12.   (a)   Describe the functions of stream ciphers and RC4.

Or

(b)   Mention the purpose of digital signature with neat diagram.

13.   (a)   Elaborate the authentication services of Kerberos.

Or

(b)   Show the principal differences between version 4 and version 5 of kerberos.

[P.T.O]

14. (a) What are the functions of secure electronic transaction (SET)? Explain.

Or

(b) Distinguish between the end-to-end and end-to-intermediate authentication.

15. (a) Summarize the measures that may be used for intrusion detection.

Or

(b) List out the various types of firewalls and explain.

PART C — (5 × 8 = 40 marks)

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

16. (a) Discuss the transposition techniques in cryptography.

Or

(b) Outline the Brute-Force Cryptanalysis of Caesar Cipher.

17. (a) Evaluate the secure hash functions and HMAC.

Or

(b) Formulate the functions of public-key cryptograph algorithms.

18. (a) What are the S/MIME messages? Explain.

Or

(b) Examine the procedures of X.509 strong authentication.

19. (a) Illustrate the IPSec authentication header with diagram.

Or

(b) Determine the basic concepts of SNMP.

20. (a) Elaborate the distributed denial of service attacks with diagram.

Or

(b) What are the strategies of password selection? Explain.

—————

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

Code No. : 6443   Sub. Code : ZCSM 24

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022

Second Semester

Computer Science — Core

CRYPTOGRAPHY AND NETWORK SECURITY

(For those who joined in July 2021 onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The keys used in cryptography are
    (a) secret key   (b) private key
    (c) public key   (d) All of these

2. A transposition cipher reorders (permutes) symbols in a
    (a) block of packets   (b) block of slots
    (c) block of signals.   (d) block of symbols

3. AES has _____ different configuration
    (a) two   (b) three
    (c) four   (d) five

4. _____ processes the input one block of elements at a time, producing an output block for each input block
    (a) block cipher
    (b) stream cipher
    (c) cryptanalysis
    (d) encryption

5. The abbreviation of S/MIME is _____
    (a) Secure/Multipurpose Internet Mail Extension
    (b) Secure/Multipurpose Intent Merged Extension
    (c) Secured/Multipurpose Internet Mail Extension
    (d) Secure/Multimedia Mail Internet Mail Extension

6. _____ protocols enable communicating parties to satisfy themselves mutually about each other's identity and to exchange session keys.

   (a) Mutual authentication

   (b) Identity federation

   (c) Identity management

   (d) None

7. _____ defines a number of techniques for key management.

   (a) IDE   (b) IP

   (c) IKE   (d) None

8. _____ is designed to make use of TCP to provide a reliable end-to-end secure service.

   (a) SSL

   (b) SLS

   (c) LSS

   (d) All of these

9. A _____ model is used to establish transition probabilities among various states.

   (a) operational

   (b) Markov process

   (c) multivariate

   (d) time series

10. Which of the following is the malicious software?

    (a) Backdoor   (b) Logic Bomb

    (c) Trojan Horses   (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) Compare the difference between security services and security mechanism.

    Or

    (b) Write short notes on the principles of block ciphers.

12. (a) Comment on RSA algorithm and its security.

    Or

    (b) Mention the requirements of Hash function.

13. (a) Differentiate between Kerbero V4 Authentication Dialogue Message Exchange

    Or

    (b) Describe the various types of message components.

14. (a) List down the applications of IPsec.

Or

(b) Write short notes on Secure Electronic Transaction.

15. (a) Recall the various types of malicious software.

Or

(b) How to construct the attack network in DDoS?

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 detailed about models of Network Security.

Or

(b) Summarize the terms of differential and linear crypt analysis attacks.

17. (a) Define RC4. Discuss about RC4 Key schedule, Encryption and Security.

Or

(b) Elaborate the concept of Diffie-Hellman Key Exchange.

18. (a) Determine the various types of Authentication Services.

Or

(b) Illustrate the S/MIME functionality and messages.

19. (a) Draw and explain the Secure Socket Layer architecture.

Or

(b) Explain how to improve the transport layer security.

20. (a) Construct the various approach for intrusion detection.

Or

(b) Describe the ethical issues related to computer and information system.

—————

Reg. No. : ....

Code No. : 6447   **Sub. Code : ZCSM 31**

M.Sc.(CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Third Semester

Computer Science

DIGITAL IMAGE PROCESSING

(For those who joined in July 2021 onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Image restoration is used to improve the
————————— image.

   (a) Quantity   (b) Quality

   (c) Blur   (d) None of the above

2. Un-sampling is a process of ————————— the spatial resolution of the image.

   (a) Decreasing   (b) Increasing

   (c) Averaging   (d) Doubling

3. 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

4. An alternate approach to median filtering is —————————

   (a) Use a mask   (b) Gaussian filter

   (c) Sharpening   (d) Laplacian filter

5. Image transforms are needed for

   (a) Conversion information form spatial to frequency

   (b) Spatial domain

   (c) Time domain

   (d) Both (b) and (c)

6. In power transformation values are dependent on value of

   (a) X-rays   (b) Alpha

   (c) Beta   (d) Gamma

7. Compression is done for saving

   (a) Storage   (b) Bandwidth

   (c) Money   (d) Both (a) and (b)

8. Which of the following would not be suitable for Lossy Compression?

   (a) Speech   (b) Video

   (c) Text   (d) Image

9. Sobel is better than Prewitt in Image

   (a) Sharpening   (b) Bluring

   (c) Smoothing   (d) Contrast

10. Accuracy of image segmentation can be improved by the type of —————————

    (a) Processes   (b) Images

    (c) Division   (d) Sensors

PART B — (5 × 5 = 25 marks)

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

11. (a) List and explain the basic mathematical tools used in Digital Image Processing.

    Or

    (b) Define Digital Image Processing. Explain and its uses.

12. (a) Explain the steps involved in frequency domain filtering.

    Or

    (b) Classify the various types of sharpening fitters.

13. (a) Interpret the concept of image restoration.

    Or

    (b) Examine the concept of slant transform.

14. (a) Discuss about pseudo color in image processing.

    Or

    (b) Is Digital watermarking act as an important role in Image Processing? Discuss

[P.T.O.]

15. (a) Compare image detection and discontinuities.

Or

(b) How edge deduction done using sobel operator? Analyze.

PART C — (5 × 8 = 40 marks)

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

16. (a) Discuss about sensing and acquisition.

Or

(b) Categorize the various components of digital image processing.

17. (a) Illustrate the properties of 2D discrete Fourier transform.

Or

(b) Illustrate the concept of spatial enhancement methods.

18. (a) Summarize the concept of geometric mean filter.

Or

(b) Classify the various types of noise model.

19. (a) Describe the full color image processing.

Or

(b) Which type of compression should be set for color image? Analyze.

20. (a) Explain the use of motion in segmentation.

Or

(b) Describe the multilevel threshold techniques.

_____

(6 pages)

Reg. No. : ....

Code No. : 6448   **Sub. Code : ZCSM 32**

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Third Semester

Computer Science

SOFT COMPUTING

(For those who joined in July 2021 onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Neurons also known as —————

    (a) Neurodes

    (b) Processing elements

    (c) Nodes

    (d) All the above

2. Which of the following models are utilized for learning?

    (a) Neural networks

    (b) Decision trees

    (c) Propositional and FOL rules

    (d) All of the above

3. ————— is never assured of finding global minimum as in the simple layer delta rulecase.

    (a) Back propagation   (b) Front Propagation

    (c) Propagation   (d) None of the above

4. BAM stands for —————.

    (a) Bidirectional Associative Memory

    (b) Associative Memory

    (c) Biconventional Associative Memory

    (d) None of these

5. Fuzzy relation is a fuzzy set defined on the Cartesian product of

    (a) single set   (b) crisp set

    (c) union set   (d) intersection set

Page 2   Code No. : 6448

6. ————— truth values are multivalued.

    (a) Crisp logic   (b) Boolean logic

    (c) Fuzzy logic   (d) None of these

7. In propositional logic, ————— widely used for inferring facts.

    (a) Pones   (b) Modus

    (c) Modus ponens   (d) Pons

8. Fuzzy logic propositions are also quantified by

    (a) Fuzzy   (b) Fuzzy qualifiers

    (c) Fuzzy quantifiers   (d) None of these

9. ————— is the first operator applied on population.

    (a) Reproduction   (b) Recombination

    (c) Mutation   (d) None of these

10. The ————— is referred the proportion of individuals in the population which are replaced in each generation.

    (a) gap

    (b) generation gap

    (c) generation interval

    (d) interval

Page 3   Code No. : 6448

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

Choosing either (a) or (b), each answer should not exceed 250 words.

11. (a) Classify the applications of soft computing.

    Or

    (b) Explain the linear separable in Neural Network.

12. (a) Differentiate between supervised and unsupervised learning.

    Or

    (b) Draw and explain the basic mode of madaline network.

13. (a) Distinguish between fuzzy set and crisp set.

    Or

    (b) Categorize the different types of defuzzification with suitable example.

14. (a) Explain the role of fuzzy arithmetic in soft computing.

    Or

    (b) Classify the types of fuzzy measures.

Page 4   Code No. : 6448

[P.T.O.]

15. (a) State the operators of Genetic Algorithm.

Or

(b) Write down the steps for genetic Algorithm.

PART C — (5 × 8 = 40 marks)

Answer ALL questions.

Choosing either (a) or (b) Each answer should not exceed 600 words.

16. (a) Construct the McCulloch pitts neuron in soft computing.

Or

(b) Draw a biological Neural Network and explain the parts.

17. (a) Explain the working of back propagation network with neat diagram.

Or

(b) Demonstrate the counter propagation network learning algorithm.

18. (a) Categorize the different fuzzy relation operations.

Or

(b) Explain the fuzzy membership function with neat diagram.

19. (a) Present the framework of fuzzy inference system and explain.

Or

(b) Discuss the methods of aggregation of fuzzy rules.

20. (a) Discuss the various types of crossover and mutation techniques involved in Genetic Algorithm.

Or

(b) Classify the various applications of Genetic Algorithm.

———————

(6 pages)　　Reg. No. : ....

Code No. : 6449　　Sub. Code : ZCSM 33

M.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Third Semester

Computer Science — Core

ADVANCED COMPUTER NETWORKS

(For those who joined in July 2021 onwards)

Time : Three hours　　　　Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. ——————— is determining how packets are routed from source to destination.

   (a) Transport layer　　(b) Network layer

   (c) Application layer　　(d) Data link layer

2. Which transmission media provides the highest transmission speed in a network?

   (a) Coaxial cable　　(b) Optical fiber

   (c) Twisted pair cable　(d) Electrical cable

3. Protocols in which the sender sends one frame and then waits for an acknowledgement before proceeding for next frame are called as

   (a) Simplex protocol

   (b) Simplex stop and wait protocols

   (c) Unrestricted simplex protocol

   (d) Restricted simplex protocols

4. Data link layer is responsible for ———————

   (a) Error control　　(b) Framing

   (c) Flow control　　(d) All the above

5. If any frame is manipulated or lost, all subsequent frames have to be sent again is called

   (a) Go-Back-N ARQ　　(b) ALOHA

   (c) Selective repeat　　(d) Sonet

6. ——————— is the network layer protocol.

   (a) SMTP　　-　　(b) HTTP

   (c) IP　　　　(d) TCP

7. ——————— are the transport layer protocols used in networking.

   (a) TCP and FTP　　(b) TCP and UDP

   (c) UDP and HTTP　　(d) HTTP and FTP

8. Two identifiers are needed to define the processes at the transport layer

   (a) Logical address　　(b) Physical address

   (c) Port address　　(d) IP address

9. When displaying a web page, the application layer uses the

   (a) FTP protocol　　(b) HTTP protocol

   (c) SMTP protocol　　(d) TCP protocol

10. Caesar cipher uses ——————— to encrypt.

    (a) $C = (P+3) \bmod 26$　　(b) $C = (p+3) \bmod 25$

    (c) $C = (p+4) \bmod 26$　　(d) $C = (p+4) \bmod 25$

PART B — (5 × 5 = 25 marks)

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

11. (a) Describe the protocol hierarchies with neat diagram.

    Or

    (b) Write the difference between connection oriented and connectionless service.

12. (a) Examine Hamming error correcting code with example.

    Or

    (b) Illustrate a simplex stop-and-wait protocol for an noisy channel.

13. (a) Describe Broadcast-Routing algorithm.

    Or

    (b) Illustrate IP address formats.

14. (a) Describe crash recovery.

    Or

    (b) Write about the transport service primitives.

15. (a) Illustrate the architecture of the Email system.

Or

(b) Write about substitution ciphers.

PART C — (5 × 8 = 40 marks)

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

16. (a) Explain OSI reference model.

Or

(b) Explain Guided transmission media.

17. (a) Illustrate error detecting code with example.

Or

(b) Explain sliding window protocol using selective repeat.

18. (a) Examine the principles of the network layer in the internet.

Or

(b) Write in detail about IPV6.

19. (a) Generalize the services provided by the transport layer.

Or

(b) Illustrate UDP?

20. (a) DNS (Domain Name System) explain.

Or

(b) What are the basics of computer network simulation? Explain.

———————

Reg. No. : ....

Code No. : 6450   **Sub. Code : ZCSM 34**

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Third Semester

Computer Science – Core

RESEARCH METHODOLOGY

(For those who joined in July 2021 onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A research which follows case study method is called

    (a) Clinical or diagnostic

    (b) Causal

    (c) Analytical

    (d) Qualitative

2. Research conducted in class room atmosphere is called

    (a) Field study

    (b) Survey

    (c) Laboratory research

    (d) Empirical research

3. "Reasoning from general to particular" is called

    (a) Induction   (b) Deduction

    (c) Observation   (d) Experience

4. "Deduction and induction are a part of system of reasoning" - stated by

    (a) Caroline   (b) P.V Young

    (c) Dewey John   (d) Emory

5. Variance of a random variable X is given by _____

    (a) $E(X)$ (b) $E(X^2)$

    (c) $E(X^2) - (E(X))^2$ (d) $(E(X))^2$

6. If the null hypothesis is false then which of the following is accepted?

    (a) Null hypothesis

    (b) Positive hypothesis

    (c) Negative hypothesis

    (d) Alternative hypothesis

7. What is plagiarism?

   (a) Using words or ideas of another author/researcher without citing the source

   (b) Paraphrasing original content and not citing it

   (c) Using your own previous works without proper acknowledgment

   (d) All of the above

8. Copyright is —————

   (a) Positive right   (b) Negative right

   (c) Exclusive right   (d) Both (a) and (b)

9. In which of these people with similar interests contribute with their knowledge?

   (a) Seminar   (b) Conference

   (c) Symposium   (d) Convention

10. Which of the following is not an effective way for presentation?

    (a) not relying on technology

    (b) use visuals wisely

    (c) consider audience

    (d) presentation without plan

PART B — (5 × 5 = 25 marks)

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

11. (a) List and explain the objectives of research methodology.

    Or

    (b) How to do you go about formulating research problem? Discuss.

12. (a) Analyze the relationship between the explanation and prediction.

    Or

    (b) Write the limitations of primary data collection.

13. (a) Differentiate between probability and non probability sampling.

    Or

    (b) Construct the structure of scientific reports.

14. (a) Explain the different criteria's of patentability.

    Or

    (b) How to select a good trademark? Discuss.

15. (a) Tell about objectives of teaching.

Or

(b) Enumerate the advantages and disadvantages of discussion method of teaching.

PART C — (5 × 8 = 40 marks)

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

16. (a) Categorize the various types of research.

Or

(b) Discuss the importance of critical literature review and its uses in planning innovation research.

17. (a) Develop the research plant for computer science research.

Or

(b) Explain the various sources of obtaining data for the selected research problem.

18. (a) What are the steps involved in writing good research report? Analyze.

Or

(b) Describe the guidelines for preparing a good research report oral presentation.

19. (a) Why copy rights are preferred rather than patents in case of software? Justify your answer.

Or

(b) As a student what are the precaution to be taken to publish a plagiarism free report. Discuss.

20. (a) Elucidate the effectiveness of ICT corner.

Or

(b) Demonstrate the principles of adolescent development.

———————