

(6 Pages)

Reg. No. :

**Code No. : 20597 E Sub. Code : SMCS 11/
SMSE 11/AMCS 11/
AMSE 11**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2021.

First Semester

Computer Science/Software Engineering — Core

PROGRAMMING IN C

(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. _____ are user defined word used to name of entities like variables, arrays, functions, structures etc.,
(a) Character Set (b) Identifiers
(c) Constants (d) Storage Class

2. What is the size of char datatype?
- (a) 8 Byte (b) 4 Byte
(c) 2 Byte (d) 1 Byte
3. When a loop written inside the body of another loop then, it is known as
- (a) if (b) if-else
(c) switch (d) nesting of loop
4. _____ statement is encountered loop is terminated and control is transferred to the statement, immediately after loop.
- (a) for (b) continue
(c) break (d) do
5. _____ is the collection of similar data types or collection of similar entity stored in contiguous memory location.
- (a) Struct (b) Union
(c) Array (d) Pointer

6. Array of character is a
- (a) string (b) float
(c) double (d) enum
7. Function declaration is also known as function _____.
- (a) model (b) view
(c) argument (d) prototype
8. Which of the following are themselves a collection of different data types?
- (a) String (b) Struct
(c) Char (d) Integer
9. In pointer _____ is a indirection operator or dereference operator.
- (a) > (b) ::
(c) & (d) *
10. _____ function is used to write a character into a file.
- (a) puts() (b) putc ()
(c) getc() (d) gets()

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) List out the rules for naming the identifiers.

Or

- (b) Explain the Relational and Conditional Operators.

12. (a) Discuss the working of Switch statement with an example.

Or

- (b) Write note on if-else statement with suitable statement.

13. (a) How to declare and initialize a one dimension array? Explain with an example.

Or

- (b) Write a C program to count total number of elements divisible by a specific number in a one dimensional array.

14. (a) What is the need for User-defined functions?

Or

- (b) Write a user defined function to calculate area of the square and area of triangle using no arguments and no return value.

15. (a) Mention the underlying concepts of Pointers.

Or

- (b) Write a program to print the address of a variable along with its value.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Write note on Arithmetic operators, Increment and Decrement Operators.

Or

- (b) Write a program to read three values using scanf function and print the following results :

- (i) Largest of the three
- (ii) Average of the three values.

17. (a) Discuss about Looping statements in C with an example.

Or

- (b) Write a program to sum of digits using while loop.

18. (a) Explain the String handling functions in C.

Or

(b) Write a C program to multiply two matrices.

19. (a) Describe the different categories of user defined functions.

Or

(b) Write a recursive function to calculate factorial value.

20. (a) Write a function using pointers to exchange the values stored in two locations in the memory.

Or

(b) Illustrate the file handling functions in C.

(6 Pages)

Reg. No. :

**Code No. : 20598 E Sub. Code : SMCS 21/
SMSE 21/AMCS 21/
AMSE 21**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2021.

Second Semester

Computer Science/Software Engineering — Core

OBJECT ORIENTED PROGRAMMING IN C++

(For those who joined in July 2017 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL the questions.

Choose the correct answer :

1. _____ are the basic run time entities in an object oriented system.
 - (a) Data
 - (b) Objects
 - (c) Classes
 - (d) All the above

2. The entire set of data and code can be made user defined by
- (a) Objects (b) Classes
- (c) Encapsulation (d) Polymorphism
3. Constructors are used to
- (a) Initialize variables
- (b) Allocate memory
- (c) Both the above
- (d) None of the above
4. A destructor can have _____ arguments.
- (a) One (b) Many
- (c) Void (d) No
5. From the following find out which one cannot use friend function
- (a) = (b) ()
- (c) [] (d) All the above

6. Grand parent base class is
- (a) an object
 - (b) virtual
 - (c) a class
 - (d) all the above
7. We cannot use virtual
- (a) objects
 - (b) classes
 - (c) constructors
 - (d) destructors
8. In C++ by default the floating number are printed with _____ digits after the decimal points.
- (a) 4
 - (b) 6
 - (c) 8
 - (d) 16
9. The stream state number uses _____ fields to store status.
- (a) binary
 - (b) bit field
 - (c) non zero
 - (d) file name
10. _____ is a generic programming.
- (a) inheritance
 - (b) polymorphism
 - (c) data types
 - (d) templates

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Write short note on ODL.

Or

(b) Give the applications of OOP.

12. (a) Explain about constructors with default arguments.

Or

(b) Construct a matrix object and display the same.

13. (a) Write a C++ program to overload unary minus.

Or

(b) How constructors are used in derived class?

14. (a) With suitable example explain pointer arithmetic in C++.

Or

(b) Write a program in C++ to search an element in an array using pointers.

15. (a) Explain the functions for manipulation of file pointer.

Or

- (b) How will you overload a template function?

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Give the syntax of a class. Explain with example.

Or

- (b) How will you define member function?

17. (a) Write a C++ program to find simple interest using dynamic initialization of objects.

Or

- (b) Explain parameterized constructor with example.

18. (a) Explain the rules for overloading operators and hence give the operators that cannot be overloaded.

Or

- (b) What are virtual base classes? Give example.

19. (a) Give an account of virtual function in C++.

Or

(b) Explain in detail the formatted console I/O operation.

20. (a) Discuss about opening and closing a file.

Or

(b) Explain various class template with example.

(6 pages)

Reg. No. :

**Code No. : 30176 E Sub. Code : GMCS 63/
GMSE 63**

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2020.

Sixth Semester

Computer Science/Software Engineering — Main

DATA MINING

(For those who joined in July 2012 – 2015)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Data mining is
 - (a) The actual discovery phase of a knowledge discovery process
 - (b) The state of selecting right data for a KDD process
 - (c) A subject oriented integrated time variant non volatile collection of data in support of management
 - (d) None of the above

2. Which stage of data mining involves preparation and collection of data?
 - (a) Validation (b) Exploration
 - (c) Both (a) and (b) (d) Collection

3. Which algorithm is used to find correlations among different attributes in a data set?
 - (a) Associative algorithm
 - (b) Association algorithm
 - (c) Time series algorithm
 - (d) Series algorithm

4. Which of the following is used for frequent item set mining and association rule learning over relational database?
 - (a) Fp-growth (b) AIS
 - (c) Apriori (d) SETM

5. Classification is
 - (a) A subdivision of a set of examples into no. of classes
 - (b) A measure of accuracy
 - (c) The task of assigning a classification to set of examples
 - (d) None of the above

6. A decision tree is a tree in which every node is either a _____ or a decision node.
- (a) Leaf node
 - (b) Root node
 - (c) Both (a) and (b)
 - (d) Sub node
7. Which method of analysis does not classify variables as dependant or independent?
- (a) Regression analysis
 - (b) Discriminate analysis
 - (c) Analysis of variance
 - (d) Cluster analysis
8. Cluster is
- (a) Group of similar objects that differ significantly from other objects
 - (b) Simply data in order prepare machine learning algorithm
 - (c) Symbolic representation of facts
 - (d) None of the above
9. A _____ technique is used to crawl through various web sources to collect required information, which enables a individual or company to promote business.
- (a) Text data mining
 - (b) Web data mining
 - (c) Spatial data mining
 - (d) Time series data mining

10. Web mining is the application of
- (a) Data mining
 - (b) Text mining
 - (c) Both (a) and (b)
 - (d) None of these

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) What is data mining and Why data mining now?

Or

- (b) Give some applications of data mining.

12. (a) Write a note on FP- Tree Algorithm.

Or

- (b) Explain Apriori algorithm.

13. (a) What is classification and Define decision tree?

Or

- (b) What is Naive Bayes algorithm?

14. (a) What is cluster analysis and what are the types of cluster analysis methods?

Or

- (b) Elucidate the idea behind logistic regression.

15. (a) Define web mining and list out the types of web mining.

Or

- (b) Explain web content mining.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Guidelines for successful data mining.

Or

- (b) List and explain Data mining Applications.

17. (a) Explain Association rule.

Or

- (b) Discuss and detail about OLAP.

18. (a) A novel association rule mining approach using TID.

Or

(b) Decision tree and Naivebayes classifier.

19. (a) Divide and conquer approach and parallel clustering approach to deal large database.

Or

(b) Explain the K-means method.

20. (a) Explain Web Usage Mining.

Or

(b) Explain Web Technology and its Characteristics in Web Mining.

Code No: 20599E

Sub. Code: SMCS31/SMSE31

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2021

THIRD SEMESTER

COMPUTER SCIENCE/ SOFTWARE ENGINEERING -CORE

JAVA PROGRAMMING

(For those who joined in July 2017 onwards)

Time: Three hours

Maximum:75 marks

Part - A (10 X 1 = 10 marks)

Answer all questions, choose the correct answer

1. The data type short is a ----- bit type
a) 16 b) 32 c) 64 d) 128
2. The data or variables defined within the class are called---- variables
a) private b) public c) protected d) instance
3. When we pass a primitive type to the method it is passed by
a) method b) reference c) value d) all the above
4. When a subclass includes all the member of its super class then it is declared as
a) private b) public c) protected d) instance
5. The access modifier in a package is
a) private b) public c) protected d) all the above
6. The exception not declared in throws clause results in ---- error
a) compile time b) runtime c) thread d) all the above
7. Void play (URL,url) plays
a) audio and video b) audio c) video d) applet
8. The root of the Java event class hierarchy is in
a) java.util b) java.nio c) java.applet d) java.awt
9. The AWT fonts have specific
a) family name b) logical name c) face name d) all the above
10. ---- creates popup list
a) button b) check box c) choice d) cursor

PART B (5 x 5 = 25 marks)

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

Either answer should not exceed 250 words

11. a) Define primitive data types. Explain the Integers in Java with example.

(OR)

- b) Write a program to calculate the volume of three boxes which returns the result to the caller.

12. a) Explain recursion in Java with example.

(OR)

- b) How will you prevent overriding in Java?

13. a) Explain about access protection in Java.

(OR)

b) Discuss about finally used in Java exception.

14. a) Give the methods used while applets are implemented.

(OR)

b) State any five event listeners in Java interfaces.

15. a) Define AWT classes in Java. State any five of them.

(OR)

b) Give the syntax of label and give its constructors.

PART B (5 x 8 = 40 marks)

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

Either answer should not exceed 600 words

16. a) Discuss about the literals in Java with suitable examples.

(OR)

b) Explain about objects in Java. Also explain about object reference variable.

17. a) With suitable examples explain the argument passing and returning objects in Java.

(OR)

b) Explain the method overriding criteria in Java with example.

18. a) Define interface and explain its implementation.

(OR)

b) With suitable example explain the syntax of Try and Catch

19. a) Write a program in Java using Applet to display a scrolling message.

(OR)

b) Define event. Explain any three with its syntax.

20. a) Write a program to display an applet window and a child window.

(OR)

b) Discuss about Choice and checkbox in Java.

Code No: 20600E

Reg. No.....

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2021
THIRD SEMESTER

Sub. Code: SMCS32

COMPUTER SCIENCE-CORE
COMPUTER ARCHITECTURE

(For those who joined in July 2017 onwards)

Time: Three hours

Maximum: 75 marks

Part - A (10 X 1 = 10 marks)

Answer all questions, choose the correct answer

1. Specific purpose storage location is termed as
 - (a) register
 - (b) executed register
 - (c) timed register
 - (d) sequenced register
2. _____ is the step during which a new instruction is read from the memory.
 - (a) decode
 - (b) fetch
 - (c) execute
 - (d) none of these
3. The stack is accessed using
 - (a) SP register
 - (b) SS register
 - (c) SP and SS register
 - (d) None of the these
4. The addressing mode(s), which uses the PC instead of a general purpose register is
 - (a) Indexed with offset
 - (b) Relative
 - (c) Direct
 - (d) Both indexed with offset and direct
5. Booth algorithm gives procedure for multiplyinh binary integers in
 - (a) Signed magnitude representation
 - (b) Unsigned representation
 - (c) 2's complement representation
 - (d) none of the above
6. A floating-point number in computer registers consists of
 - (a) Mantissa
 - (b) Exponent
 - (c) Fixed
 - (d) both a & b
7. Interrupts form an important part of _____ systems.
 - (a) Batch processing
 - (b) Multitasking
 - (c) Real-time processing
 - (d) Multi-user
8. The DMA transfers are performed by a control circuit called as _____.
 - (a) DMA controller
 - (b) Device Interface
 - (c) Data controller
 - (d) Overlooker
9. Which of the following is not a type of computer memory?
 - (a) DRAM
 - (b) SRAM
 - (c) ROM
 - (d) FRAM
10. The virtual memory basically stores the next segment of data to be executed on the _____.
 - (a) Secondary storage
 - (b) Disks
 - (c) RAM
 - (d) ROM

PART B – (5 X 5 = 25 Marks)

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

11. a) Write short notes on Computer instructions.
Or
b) List and explain the phases of instruction cycle.
12. a) Discuss the reverse polish notation in stack organization.
Or
b) Write short notes on shift instructions.
13. a) Explain the hardware implementation of the addition algorithm.
Or
b) Discuss the hardware implementation of the division algorithm.
14. a) Explicate the asynchronous common interface.
Or
b) What is DMA Controller? Explain briefly.
15. a) Write short notes on an auxiliary memory.
Or
b) What is virtual memory? Explain briefly.

PART C – (5 X 8 = 40 Marks)

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

16. a) Explain the computer registers in detail.
Or
b) Discuss the fetch and decode in instruction cycle.
17. a) Describe the stack organization.
Or
b) Explicate program control in detail.
18. a) Discuss the hardware implementation of the multiplication algorithm.
Or
b) Explain floating-point arithmetic.
19. a) Explicate the asynchronous serial transfer.
Or
b) Describe the software interrupts.
20. a) Discuss the associative memory.
Or
b) Interpret cache memory.

- 1) _____ is a fixed space component
 - a) compile time
 - b) run time
 - c) execution time
 - d) All the above
- 2) _____ is a finite set of instruction^s that accomplish a particular task.
 - a) program
 - b) algorithm
 - c) flowchart
 - d) all the above
- 3) The evaluation of expression is the application of
 - a) stacks
 - b) queues
 - c) circular queue
 - d) linked list
- 4) Insertion and deletion at front, rear and in between are possible in
 - a) queue
 - b) circular queue
 - c) linked list
 - d) all the above
- 5) A full binary of binary depth 4 contains _____ nodes
 - a) 8
 - b) 12
 - c) 15
 - d) 16
- 6) Root is having level
 - a) 0
 - b) 1
 - c) 2
 - d) 3
- 7) The length of a path in a graph is the number of _____ in it
 - a) subgraph
 - b) vertices
 - c) edges
 - d) all the above
- 8) A strongly connected compound is a maximal
 - a) vertices
 - b) edges
 - c) sub graph
 - d) adjacent vertex
- 9) A graph with n edges its spanning tree has _____ edges
 - a) 2n
 - b) 2n-1
 - c) n-1
 - d) n/2
- 10) Quick sort takes _____ Time
 - a) O(n)
 - b) log(n)
 - c) O(nlogn)
 - d) O(mn)

PART B (5 x 5 = 25 marks)

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

Either answer should not exceed 250 words

11)a) Explain the performance analysis of an algorithm with reference to space complexity.

(OR)

b) with suitable example explain the advantages of ADT

12)a) with algorithm explain the procedure to add and delete an element in a circular queue.

(OR)

b) Define sparse matrix explain the linked representation of the same

13)a) Define a tree and explain the give the list representation of the same .

(OR)

b) with suitable example explain the procedure to convert a forest into a binary tree

14)a) With suitable example explain adjacency multiple list

(OR)

b) Define graph . Explain cyclic and acyclic graph

15)a) Explain sequential search with algorithm.

(OR)

b) Define hashing and explain hash table with example

PART B (5 x 8 = 40 marks)

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

Either answer should not exceed 600 words

16) a) Explain abstract data types with example with reference to the categories of function of the data types.

(OR)

b) Give an account of arrays

17)a) with suitable algorithm explain the procedure to add two polynomials

(OR)

b) Define singly linked list and its representation give the procedure to add and delete an element in a singly linked list

18)a) what is a heap? Give example with addition and deletion of an element in a heap

(OR)

b) Explain in detail the binary tree traversal

19)a) Explain in detail the Kruskal's algorithm to construct minimum spanning trees

(OR)

b) With suitable example explain shortest path and transitive closure

20)a) Give an account of quick sort

(OR)

b) With suitable example and algorithm explain merge sort

(6 Pages)

Reg. No. :

**Code No. : 20602 E Sub. Code : SMCS 41/
SMSE 41**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2021.

Fourth Semester

Computer Science/Software Engineering — Core

VISUAL BASIC

(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. _____ displays the commands that are required to build an application.
(a) Menu bar (b) Title bar
(c) Message bar (d) Tool bar

2. _____ a text that the user cannot modify or interact with.
- (a) Label (b) Button
(c) Image (d) Picture
3. _____ is the process of clicking the mouse button in a control and moving the mouse while holding down the mouse button.
- (a) Dragging (b) Dropping
(c) Drag and Drop (d) Mouse event
4. Custom dialog boxes are customized by the _____
- (a) Program (b) Code
(c) User (d) Developer
5. _____ is used to open a table.
- (a) Open (b) Connection
(c) Open database (d) Open Record set

6. The _____ method can be used to locate a record in a table type Record set.
- (a) Seek (b) Find
(c) Move (d) Hit
7. _____ is an important window topic available in Visual Basic.
- (a) OLE (b) IDE
(c) GUI (d) OLE Drag
8. The _____ contains a data object, which will store the requested data.
- (a) Data (b) Argument
(c) Data parameter (d) Parameter
9. _____ are defined by the data provider.
- (a) Dynamic property (b) Built-in
(c) Properties (d) Dynamically
10. _____ uses the idea of a connection instead of a databases.
- (a) ADO (b) OLE DB
(c) IDE (d) GUI

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 IDE.
Or
(b) Explain Properties, Window and Object Browser.
12. (a) What is Menu Interface? How to use it?
Or
(b) Write short notes on Dragging and Dropping.
13. (a) Explain how to create an ODBC data source.
Or
(b) Write about adding Field, Index and Deleting Index.
14. (a) Write down the events related to OLE Drag and Drop with example.
Or
(b) Write short notes on Classes and Class Modules.

15. (a) Explain :
- (i) Connection (2)
 - (ii) Command (2)
 - (iii) Recordset (1)

Or

- (b) Write short notes on Random Access.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Explain in detail about Control Structures.

Or

- (b) Write briefly about Textbox and its properties.

17. (a) Explain Mouse Events with suitable program.

Or

- (b) Explain in detail about using Flexgrid Control in VB.

18. (a) Write in detail about RDO.

Or

(b) Explain briefly about ODBC.

19. (a) Discuss about OOPS concept supported by Visual Basic.

Or

(b) Explain in detail about the Fundamentals of OLE.

20. (a) Discuss about the accessing files in VB.

Or

(b) Write briefly about Sequential Access Files and Random Access Files.

(6 Pages)

Reg. No. :

Code No. : 20603 E Sub. Code : SMCS 42

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2021.

Fourth Semester

Computer Science — Core

INFORMATION SECURITY

(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 them is not a vulnerability to information security?
 - (a) Flood
 - (b) Without deleting data, disposal of storage media
 - (c) Unchanged default password
 - (d) Latest patches and updates not done

2. Which of the following is a class of computer threat?
- (a) Phishing (b) Soliciting
(c) Stalking (d) DoS attacks
3. Viruses are _____
- (a) Machine made (b) Naturally occur
(c) Man made (d) All of the above
4. A _____ is a straight copy of the selected folders and files at a given instant in time.
- (a) Incremental backup
(b) Full backup
(c) Differential backup
(d) Mirror backup
5. DES stand for _____
- (a) Data Encryption Standard
(b) Digital Encryption Standard
(c) Dynamic Encryption Standard
(d) Direct Encryption Standard

6. _____ is the process of managing risks associated with the use of information technology?
- (a) System Management
 - (b) Database Management
 - (c) Information Security Risk Management
 - (d) Risk Assessment
7. A _____ is a document that outlines the rules, laws and practices for computer network access.
- (a) System policy
 - (b) Network policy
 - (c) Information technology policy
 - (d) Security policy
8. _____ is a program or hardware device that filters the information coming through an internet connection to a network or computer system.
- (a) Anti virus
 - (b) Firewall
 - (c) Cookies
 - (d) Cyber safety

9. Who works with a company to provide an audit of security systems used by that company?
- (a) Security Auditor
 - (b) IT Auditor
 - (c) Network Auditor
 - (d) None of these
10. Which of the following is/are email etiquette rules?
- (a) Clear subject
 - (b) Professional email address
 - (c) Think twice before hitting reply to all
 - (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) Write the aspects of information security.
- Or
- (b) What is spam? Explain.
12. (a) Explain briefly on bootsector virus.
- Or
- (b) List and explain quantities of a good back up.

13. (a) Explain the following :
- (i) Private key
 - (ii) Public key
- Or
- (b) What are the challenges in risk management of information security? Explain.
14. (a) Write short note on firewalls.
- Or
- (b) Explain briefly on password policy.
15. (a) Write responsibilities of a security auditor.
- Or
- (b) Discuss security policy compliance.

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 information security? Explain the purpose of information security.
- Or
- (b) Explain the following :
- (i) Hacking
 - (ii) Spam

17. (a) Discuss virus detection and recovery.
Or
(b) Explain backup solutions used in Windows 2000.
18. (a) Describe about public key cryptography.
Or
(b) How to analyze the probability of threat occurrence? Explain.
19. (a) Explain security policy in detail.
Or
(b) Discuss about honeypots.
20. (a) Describe phases of a security audit.
Or
(b) Explain policy documentation in detail.
-

(6 Pages)

Reg. No. :

**Code No. : 20604 E Sub. Code : SMCS 43/
SMSE 43**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2021.

Fourth Semester

Computer Science/Software Engineering — Core

RELATIONAL DATABASE MANAGEMENT SYSTEM

(For those who joined in July 2017 onwards)

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 1 = 10 marks)

Answer ALL the questions.

Choose the correct answer :

1. A _____ is a collection of interrelated data and a set of programs to access those data.
 - (a) Database Management System
 - (b) Query Processor
 - (c) Interpreter
 - (d) Program

2. A _____ is an association among several entities.
- (a) Relationship (b) Entity
(c) Attributes (d) Set
3. A relational database consists of a collection of _____, each of which is assigned a unique name.
- (a) Table (b) Attribute
(c) Entity (d) Relationship
4. The _____ operation allows the combining of two relations by merging pairs of tuples, one from each relation, into a single tuple.
- (a) Attributes (b) Set
(c) Join (d) Pair
5. _____ *functions* are functions that take a collection (a set or multiset) of values as input and return a single value.
- (a) Nested (b) Aggregate
(c) Views (d) Integrity

6. A subquery that uses a correlation name from an outer query is called a _____.
- (a) Having Clause
 - (b) From Clause
 - (c) Correlated SubQuery
 - (d) Duplicate Tuples
7. An _____ is a set of entities of the same type that share the same properties, or attributes.
- (a) Entity Set (b) Attribute set
 - (c) Relation set (d) Entity model
8. In the _____ normal form, a composite attribute is converted to individual attributes.
- (a) First (b) Second
 - (c) Third (d) Fourth
9. A stored procedure in SQL is a _____
- (a) Block of functions
 - (b) Group of Transact-SQL statements compiled into a single execution plan
 - (c) Group of distinct SQL statements
 - (d) None of the mentioned

10. _____ section contains variables, constants, cursor or exceptions that are going to be used by procedure or function are declared.
- (a) Declarative
 - (b) Executable
 - (c) Exception Handling
 - (d) Group

SECTION B — (5 × 5 = 25 marks)

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

11. (a) Explain about System Applications.
- Or
- (b) Explain about the Components of Storage Manager.
12. (a) Explain about keys.
- Or
- (b) Write the Union Operations.
13. (a) Explain about Null Values.
- Or
- (b) How to create a Views?

14. (a) What is Attributes? What are the types of Attributes?

Or

(b) What is Normalization?

15. (a) How to create a Table?

Or

(b) Write a syntax for Delete a Table.

SECTION C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Explain about the view of Data.

Or

(b) Explain about Transaction Management.

17. (a) Explain about the Structure of Relational Databases.

Or

(b) Explain about the Overview of the SQL Query Language.

18. (a) Explain Aggregate Functions.

Or

(b) Explain about SQL Data Types.

19. (a) Explain about First Normal Form.

Or

(b) Explain about Enhanced Entity Relationship Model.

20. (a) How to modify a table?

Or

(b) Explain about the Stored Procedure or function's block of code in PL/SQL.

1. Which one of the following is not a phase of Prototyping Model?
 - a) Quick Design
 - b) Coding
 - c) Prototype Refinement
 - d) none of these
2. The spiral model was originally proposed by
 - a) IBM
 - b) Barry Boehm
 - c) Pressman
 - d) Royce
3. A 66.6% risk is considered as
 - a) very low
 - b) low
 - c) moderate
 - d) high
4. Which of the following is not defined in a good Software Requirement Specification (SRS) document?
 - a) Functional Requirement
 - b) Nonfunctional Requirement
 - c) Goals of implementation
 - d) None of these.
5. Which tool is use for structured designing ?
 - a) Program flowchart
 - b) Structure chart
 - c) Data-flow diagram
 - d) Module
6. The importance of software design can be summarized in a single word which is:
 - a) Efficiency
 - b) Accuracy
 - c) Quality
 - d) Complexity
7. What is Cyclomatic complexity?
 - a) Black box testing
 - b) White box testing
 - c) Yellow box testing
 - d) Green box testing
8. Alpha testing is done at
 - a) Developer's end
 - b) User's end
 - c) Developer's & User's end
 - d) None of the mentioned
9. Maintenance is classified into how many categories ?
 - a) two
 - b) three
 - c) four
 - d) five
10. ISO 9001 is not concerned with _____ of quality records.
 - a) collection
 - b) maintenance
 - c) verification
 - d) dis-positioning

Part B (5 x 5 = 25 Marks)

Answer all Questions, Choosing either (a) or (b), Each answer should not exceed 250 words

- 11.a. Give a description of spiral model OR
- 11.b Explain the generic views of software Engineering.
- 12.a. What is the meaning of SRS? Explain its purpose OR
- 12.b..What are the good characteristics of SRS?
- 13.a.. How to Characterize a good Software Design? OR
- 13.b Explain developing the DFDModel of a System
- 14.a. Write about types of User Interfaces OR
- 14.b Explain Unit Testing in software engineering
- .15.a. What is ISO 9000 Certification? OR
- 15.b. Explain Software Quality Management System

Part C (5 x 8 = 40 Marks)

Answer all Questions, Choosing either (a) or (b), Each answer should not exceed 600 words

- 16.a. Explain the waterfall model in detail. OR
- 16.b. Give a details description of prototyping model.
- 17.a. Discuss about software Requirement Engineering Process OR
- 17.b. Write in details about the Responsibilities of a software project manager
- 18.a. List the Classification of Design Activities. OR
- 18.b Write about Function-Oriented Software Design
- 19.a.. What are the Characteristics of a good User Interface OR
- 19.b. Discuss about Black-box Testing AND White-box Testing.
- 20.a Discuss about SEI Capability Maturity Model OR
- 20.b. What are the characteristics of Software Maintenance?

1. A _____ is a data communication system spanning states, countries, or the whole world.
a) MAN b) WAN c) LAN d) none of the above
2. Which topology requires a multipoint connection?
a) Bus b) Star c) Mesh d) Ring
3. The information to be communicated in a data communications system is the _____.
a) Medium b) Protocol c) Message d) Transmission
4. Frequency of failure and network recovery time after a failure are measures of the _____ of a network.
a) Performance b) Security c) Reliability d) Feasibility
5. _____ provides full transport layer services to applications.
a) UDP b) TCP c) ARP d) none of the above
6. The _____ address uniquely defines a host on the Internet.
a) IP b) port c) specific d) physical
7. First Layer of the OSI Model is _____ Layer.
a) Data link b) Physical c) Network d) Transport
8. The data unit in the TCP/IP application layer is called a _____.
a) Message b) Segment c) Datagram d) Frame
9. A _____ error means that two or more bits in the data unit have changed.
a) Single-bit b) Burst c) Two-bit d) Three
10. Which error detection method involves polynomials?
a) VRC b) LRC c) CRC d) Checksum

PART - B (5 X 5 = 25 marks)

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

Each answer should not exceed 250 words.

- 11) (a) Write down the fundamental characteristics of data communication.

(or)

(b) Summarize the concept of network criteria.

- 12) (a) Distinguish between analog and digital signal.

(or)

(b) What are the advantages and disadvantages of optical fiber?

- 13) (a) Explain the uses of MODEM.

(or)

(b) What are the phases of circuit-switched network? Explain.

Continuation Sheet

- 14) (a) Distinguish between the flow and error control.
(or)
(b) Describe the structure of encoder and decoder in error correction.
- 15) (a) Differentiate between IPv4 and IPv6 packet headers.
(or)
(b) Explain the operations of user datagram protocol.

PART – C (5 X 8 = 40 marks)

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

Each answer should not exceed 600 words.

- 16) (a) Discuss the various layers in the OSI model with neat diagram.
(or)
(b) What are the levels of addresses in TCP/IP? Explain.
- 17) (a) Compare the serial versus parallel transmission.
(or)
(b) Explain the various categories of coaxial cables.
- 18) (a) What are the major components of telephone network? Describe.
(or)
(b) Elaborate the three phases of virtual-switched network.
- 19) (a) Summarize the various goals of fast Ethernet.
(or)
(b) Draw and explain the design of piggybacking in Go-Back-NARQ.
- 20) (a) What functions are performed by a bridge? Explain.
(or)
(b) Write a short note on domain name space.

(6 Pages)

Reg. No. :

**Code No. : 20607 E Sub. Code : SMCS 62/
SMSE 62**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2021.

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. In Raster scan display, picture definition is stored in memory area is called _____
 - (a) Frame buffer
 - (b) CRT
 - (c) DVST
 - (d) Plasma panel

2. _____ algorithm is a line drawing algorithm.
- (a) Bresenham's (b) Boundary fill
(c) Flood fill (d) Cohen-Sutherland
3. _____ is a rigid body transformation.
- (a) Scaling (b) Rotation
(c) Translation (d) Reflection
4. _____ transformation that produces a mirror image of an object.
- (a) Reflection (b) Rotation
(c) Scaling (d) Translation
5. An area on a display device to which a window is mapped is called a _____
- (a) Window (b) Viewport
(c) Spanport (d) Worldport
6. In Cohen-Sutherland clipping algorithm, the 4-bit codes are called _____ codes.
- (a) binary (b) decimal
(c) region (d) hexadecimal

7. In _____, input devices are requested and processing is suspended until the required values are received.
- (a) sample mode (b) request mode
(c) event mode (d) read
8. _____ is a device for specifying a series of coordinate positions.
- (a) Stroke device (b) Valuator device
(c) Pick device (d) Locator device
9. In viewing coordinate reference frame, we first pick a world coordinate positions called the _____
- (a) View reference point
(b) Window reference point
(c) Viewing
(d) Windowing
10. _____ buffer is a method used for visible surface deduction.
- (a) Depth (b) Sutherland
(c) Orthographic (d) Image

PART B — (5 × 5 = 25 marks)

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

11. (a) Write brief note on CRT system.
Or
(b) Explain briefly about filling polygon.
12. (a) Explain about composite transformations.
Or
(b) Explain rotation transformation matrix for 2D transformation.
13. (a) Explain briefly about point clipping.
Or
(b) Discuss window to viewport coordinate transformation.
14. (a) Write a note on 3D-translation.
Or
(b) Explain the following :
(i) Parallel projection
(ii) Visible line and surface identification
15. (a) Discuss about viewing pipeline in 3D.
Or
(b) Discuss briefly about 3D-scan-line method.

PART C — (5 × 8 = 40 marks)

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

16. (a) Discuss briefly about Graphics software.
Or
(b) Explain Bresenham's line drawing algorithm.
17. (a) Describe the attributes of output primitives.
Or
(b) Explain the following :
(i) Shearing in 2D transformation
(ii) Reflection in 2D transformation
18. (a) Describe Cohen-Sutherland out code algorithm for line clipping.
Or
(b) Explain polygon clipping.
19. (a) Explain 3-D rotation.
Or
(b) Explain the following 3D display methods :
(i) Perspective projection
(ii) Depth cueing
(iii) Surface rendering
(iv) Three dimensional and stereoscopic views.

20. (a) Describe parallel and perspective projection.

Or

(b) Describe depth buffer method.

(6 Pages)

Reg. No. :

Code No. : 20608 E Sub. Code : SMCS 63

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2021.

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. The following technology is not well suited for determining
 - (a) Expert system technology
 - (b) Data visualization
 - (c) Technology limited to specific data types such as numeric data types
 - (d) Parallel architecture

2. OLAP stands for
 - (a) Online Analytical Processing
 - (b) Online Analysis Processing
 - (c) Online Transaction Processing
 - (d) Online Aggregation Processing

3. Task of interfering a model from labeled training data is called
 - (a) Un supervised learning
 - (b) Supervised learning
 - (c) Reinforcement learning
 - (d) None of the above

4. Give the role of the form IF X THEN Y rule confidence is defined as the 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 false
 - (c) X is true when Y is known to be true
 - (d) X is false when Y is known to be false

5. A _____ is a single neuron with multiple inputs and output.
 - (a) Back propagation
 - (b) Perceptron
 - (c) Propagation
 - (d) None

6. Deep knowledge can be found only by using _____
- (a) Clues (b) SQL
(c) OLAP (d) Algorithm
7. _____ is a creative activity that has to be performed repeatedly in order to get best results.
- (a) Selection (b) Reporting
(c) Cleaning (d) Coding
8. Variance is a function of _____
- (a) Complexity (b) Score function
(c) Score matrix (d) Sample size
9. Meta data is a _____
- (a) Data about mining
(b) Data about query
(c) Data about data
(d) Data about no data
10. Which of the following is required by K-means clustering?
- (a) defined distance matrix
(b) no clusters
(c) initial guess as to cluster centroids
(d) all 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) What is data mining? Explain.

Or

(b) Describe the features of Data warehouse and how it might be defined?

12. (a) (i) Define OLAP.

(ii) Characteristics of OLAP.

Or

(b) What do you think of data mining from a database perspective?

13. (a) Explain the architecture of data mining system.

Or

(b) Write short notes on Association Rule.

14. (a) Discuss on Apriori algorithm.

Or

(b) What are the issues regarding classification and prediction?

15. (a) Explain K-means algorithm.

Or

(b) What are the types of data in cluster analysis?

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Explain data mining matrices.

Or

(b) Explain basic data mining tasks.

17. (a) Briefly explain about Naïve Bayesian theorem.

Or

(b) Explain various steps in data pre processing.

18. (a) Explain the process architecture with neat diagram.

Or

(b) Give an example for Apriori with transactions.

19. (a) Explain about the association rule generation process.

Or

(b) Discuss decision tree based algorithm.

20. (a) Explain the method of clustering the large database.

Or

(b) Explain the account of clustering of categorical attributes.

Code No: 20609E

Reg. No.....

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2021

Sub. Code: SECS5B/SESE5B

FIFTH SEMESTER

COMPUTER SCIENCE/SOFTWARE ENGINEERING

MAJOR ELECTIVE-MULTIMEDIA APPLICATIONS

(For those who joined in July 2017 onwards)

Time: Three hours

Maximum: 75 marks

Part - A (10 X 1 = 10 marks)

Answer all questions, choose the correct answer

- 1) A video consists of a sequence of _____
a) Frames b) Signals c) Packets d) Slots
- 2) If frames are displayed on screen fast enough, we get an impression of _____.
a) Signals b) Motions c) Packets d) Bits
- 3) In Audio and Video Compression, each frame is divided into small grids, called _____.
a) Frame b) Packets c) Pixels d) Mega Pixels
- 4) In lowest resolution a color frame is made of _____.
a) 1024 x 768 pixels b) 800 X 600 pixels c) 1152 X 864 Pixels d) 1280 X 1080 pixels
- 5) In which type of streaming multimedia file is delivered to the client, but not shared?
a) real-time streaming b) progressive download
c) compression d) none of the mentioned
- 6) Which one of the following is the characteristic of a multimedia system?
a) high storage b) high data rates
c) both high storage and high data rates d) none of the mentioned
- 7) In Joint Photographic Experts Group (JPEG), a gray scale picture is divided into blocks of _____.
a) 5 X 5 pixels b) 6 X 6 pixels c) 7 X 7 pixels d) 8 X 8 pixels
- 8) A compressed audio/video file can be downloaded as a _____.
a) Image b) Video c) Frame d) Text file
- 9) Multimedia system require hard real time scheduling _____.
a) to ensure critical tasks will be serviced within timing deadlines
b) to deliver the media file to the client
c) to minimize the delay
d) for security
- 10) The major difference between a multimedia file and a regular file is _____.
a) the size b) the attributes
c) the ownership d) the rate at which the file must be accessed

PART - B (5 X 5 = 25 marks)

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

Each answer should not exceed 250 words.

11) (a) What are the objectives of multimedia? Explain.

(or)

(b) Describe the purpose of content copyright.

12) (a) What are the different elements of text? Give example.

(or)

(b) Explain the use of text in multimedia application.

13) (a) Write down the characteristics of sound and digital audio.

(or)

(b) What are the audio file formats? Explain.

14) (a) Summarize the building blocks of product design and authoring tools.

(or)

(b) How will you multimedia tool selection? Describe.

15) (a) Describe the HTML and web authoring.

(or)

(b) Explain the purpose of internet in multimedia.

PART – C (5 X 8 = 40 marks)

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

Each answer should not exceed 600 words.

16) (a) What are the resources for multimedia developers? Explain.

(or)

(b) Draw and explain the hardware architecture of multimedia.

17) (a) Illustrate the various elements of graphics.

(or)

(b) Discuss the create images for multimedia use.

18) (a) Elaborate the use of audio in multimedia applications.

(or)

(b) Write down the characteristics of digital video.

19) (a) What are the categories of authoring tools? Explain.

(or)

(b) Explain the steps to select the right authoring paradigm.

20) (a) Summarize the multimedia considerations for internet.

(or)

(b) Discuss the design consideration for web pages.

(6 Pages)

Reg. No. :

**Code No. : 20610 E Sub. Code : SECS 6 A/
SESE 6 A**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2021.

Sixth Semester

Computer Science/Software Engineering —
Major Elective

INTERNET OF THINGS

(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. Machine to machine communication towards an emerging paradigm known as
 - (a) IIOT
 - (b) IOT
 - (c) M2M
 - (d) I2M

2. GIS stands for _____
 - (a) Geographic Information System
 - (b) Geostationary Information System
 - (c) Geo Information System
 - (d) None

3. Who invented the term the internet of things?
 - (a) Bill Gates (b) Kevin Ashton
 - (c) Steve Jobs (d) McDonald

4. What is the name of the first recognized IOT device?
 - (a) Smart watch (b) ATM
 - (c) Radio (d) Video Game

5. IEEE 802.15.4 are integrated on tiny solutions
 - (a) SoC (b) M2M
 - (c) IoT (d) IEEE

6. Stand alone smart thermostats use _____ to communicate with web services.
 - (a) LAN (b) MAN
 - (c) WIFI (d) Web

7. The NGC is the single point of contact for communication towards the _____ and _____.
- (a) GSCL, NGC (b) GSCL, DSCL
(c) GRAR, NGC (d) GSCL, NRAR
8. _____ which defines a protocol for retrieving sensor metadata for serial port (RS232)
- (a) PUCK (b) DUCK
(c) SOC (d) SOS
9. The Network Resources are software components hosted somewhere in the _____ or _____.
- (a) Cloud, Data
(b) Cloud, Database
(c) Network, Cloud
(d) Network, Data
10. RFI _____
- (a) Radio Frequency Identification
(b) Radio Frequency Identify
(c) Radio F-Index
(d) Radio F-ID

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 M2M Communication.

Or

- (b) Explain about Game Changers.

12. (a) Write about IOT value chains.

Or

- (b) Write short notes on Sensors and RFID.

13. (a) Write down the examples of Deployment scenario for devices.

Or

- (b) Write short notes on Wide Area Networking.

14. (a) Write down any four topological entities of device and Gateway Domains.

Or

- (b) Explain about Model notation and semantics.

15. (a) Explain :
(i) Sensors
(ii) Tags

Or

- (b) Write short notes on Virtual Entity functional group.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Write in detail about IOT.

Or

- (b) Write about trends in information and communications technologies.

17. (a) Explain in detail about M2M value chain.

Or

- (b) Write about Information-driven global value chain.

18. (a) Explain about the objectives on IOT architecture.

Or

- (b) Write brief notes on Communication Layer.

19. (a) Explain about ETSI M2M high-level architecture.

Or

(b) Write notes on Information model.

20. (a) Explain briefly about functional model.

Or

(b) Write in detail about Information view.

(6 Pages)

Reg. No. :

**Code No. : 20611 E Sub. Code : SECS 6 B/
SESE 6 B**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2021.

Sixth Semester

Computer Science/Software Engineering —
Major Elective

BIG DATA ANALYTICS

(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. _____ is the next generation of data warehousing and business analytics.
 - (a) Big data
 - (b) Graphics
 - (c) Database
 - (d) Data Mining

2. _____ encompasses using any sort of online media channel.
 - (a) Database Marketers
 - (b) Software Vendors
 - (c) Digital Marketing
 - (d) None

3. _____ is a system for incrementally processing updates to large data sets.
 - (a) Big data
 - (b) Percolator
 - (c) Capgemini
 - (d) EMR/EHR

4. _____ is a tool that helps advertisers understand the impact of their advertising.
 - (a) EMR
 - (b) EHR
 - (c) Marketing Mixed Modeling
 - (d) None

5. _____ is a open-source platform for storage and processing.
 - (a) MMM
 - (b) Percolator
 - (c) EMR/HER
 - (d) Hadoop

6. Data Discovery is used to _____
 - (a) Update data set
 - (b) Fraud detection
 - (c) Identify the concept
 - (d) describe the new wave of business intelligence

7. Big Data Storage is often synonymously interchanged with _____
- (a) SaaS
 - (b) HDFS
 - (c) Parallel programming
 - (d) HPC
8. Analytics on mobile devices is refer to putting the _____
- (a) BI
 - (b) HDFS
 - (c) SaaS
 - (d) None
9. The ability to cope up with continuous transformation is _____
- (a) Scale and convergence
 - (b) Agility
 - (c) Innovation
 - (d) Decision sciences
10. The CI concept was developed as _____
- (a) an alternative benchmark for evaluating privacy breaches
 - (b) to measure the difference between societies
 - (c) assure the reliability for personal information
 - (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 Big Data?
Or
(b) Explain about Social and Affiliate Marketing.
12. (a) Explain about Fraud and Big Data.
Or
(b) Explain about Advertising and Big Data.
13. (a) Explain about Hadoop's parallel world.
Or
(b) Write short notes on Mobile Intelligence is going main stream.
14. (a) Explain about Big Data computational limitations.
Or
(b) Discuss Geospatial Intelligence will make your life better.
15. (a) Explain about the Rise of Data Scientist.
Or
(b) Write down the seven Global Privacy Principles.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Write detail about what is Big Data and why it is important?

Or

- (b) Write detail about Industry Examples of Big Data.

17. (a) Write about Big Data Advances in Health care.

Or

- (b) Explain about :
- (i) Reach, Resonance and Reaction
 - (ii) Beard's take on the three Big Data Vs in Advertising.

18. (a) Explain Adding Big Data Technology into the Mix.

Or

- (b) Write about Inter and Trans-Firewall Analytics.

19. (a) Explain the Big Data Computing Platform.

Or

(b) Explain the consumption of Analytics.

20. (a) Write about setting up the Right Organizational Structure for Institutionalizing Analytics.

Or

(b) Explain in detail about Data Privacy and Ethics.

(6 Pages)

Reg. No. :

Code No. : 20612 E Sub. Code : SECS 6 C

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2021.

Sixth Semester

Computer Science — Major Elective

NEURAL NETWORKS

(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. Engineers want to exploit the capabilities of neural network in
 - (a) Signal processing
 - (b) Memory, sensory system
 - (c) Interpret nucleotide sequences
 - (d) Marketing business

2. Perception was introduced by
 - (a) Hebb
 - (b) Widrow
 - (c) Rosenbalt
 - (d) Parker

3. The first formulation of synthetic neuron model was formulated by
 - (a) Mc Culloch-Pitts
 - (b) Rosenbalt
 - (c) Hebbb
 - (d) Widrow

4. Perceptron is used to learn
 - (a) Patterns
 - (b) Clustering
 - (c) Classification
 - (d) Content addressable memory

5. All the diagonal element of the weight matrix of a Hopfield net are
 - (a) 1
 - (b) 0
 - (c) -1
 - (d) n

6. Back propagation network uses _____
 - (a) Hebbian Rule
 - (b) Generalised Delta learning Rule
 - (c) Perceptron Rule
 - (d) None

7. Un supervised learning takes place in _____
- (a) SOM (b) BPN
(c) Perceptron (d) Hopfield Net
8. In Forward only CPN, when using interpolation mode _____
- (a) only one Kohonen unit is activated
(b) accuracy increases
(c) accuracy decreases
(d) accuracy is not affected
9. When using Neural networks in Arts, which of the following statement is true?
- (a) Output tasks are difficult than input tasks
(b) Both input and output tasks are easy
(c) Both input and output tasks are difficult
(d) Input tasks are difficult than output tasks
10. Which algorithm fails in medical application's rule generation?
- (a) SIG* (b) ID3
(c) Both (a) and (b) (d) Neither (a) nor (b)

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Briefly explain about Neural networks with block diagram.

Or

- (b) Write notes on Activation function.

12. (a) What are learning rules? Give some examples.

Or

- (b) Explain the architecture of single layer perception.

13. (a) What are the areas where BPN can be used?

Or

- (b) Discuss the relation between BAM and Hopfield net.

14. (a) Write notes on SOM.

Or

- (b) Explain the architecture of forward only CPN.

15. (a) Write any five applications of neural networks in Arts.

Or

- (b) Explain the various approaches for misuse detection.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) With a neat diagram, explain about neural networks.

Or

- (b) With examples, explain Activation functions.

17. (a) Generate the output of logic AND function by McCulloch-Pitts neuron model.

Or

- (b) Write short notes on :
- (i) Single layer perceptron
 - (ii) Multi layer perceptron

18. (a) Derive Generalised Delta Rule.

Or

- (b) Explain the training Algorithm of BPN.

19. (a) With the neat diagram, explain about SOM and its architecture.

Or

- (b) What are the parameters used in full CPN training?

20. (a) Explain the implementation of Kohonen Network on transputers.

Or

- (b) Write the applications of Neural Networks in business.
-

(6 pages)

Reg. No. :

**Code No. : 20613 E Sub. Code : SSCS 3 A/
SSSE 3 A**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2021.

Third Semester

Computer Science/Software Engineering

Skill-Based Subject — PROGRAMMING WITH PHP
AND MYSQL

(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. PHP 3.0 was supplanted in the year
(a) 1996 (b) 1997
(c) 1998 (d) 1999

2. The simplest variable type in PHP is
(a) Integer (b) String
(c) Boolean (d) Floating Point

3. The function used to add an element to the end of an existing array is
- (a) array-push ()
 - (b) array-pop ()
 - (c) array-shift ()
 - (d) array-unshift ()
4. The function used to create a client session is
- (a) start () (b) create ()
 - (c) run () (d) none of these
5. The value returned by the file size function is an
- (a) Integer
 - (b) Floating point
 - (c) Boolean
 - (d) NULL
6. To set the file pointer, the function used is
- (a) set () (b) fseek ()
 - (c) ftell () (d) fstat ()

7. Which one of the information is not needed to connect to MySQL?
- (a) Host name (b) Server name
(c) Port (d) Username
8. The function that returns the remainder of a division operation is
- (a) Div () (b) Mod ()
(c) Rem () (d) None of these
9. PHP's special error suppression operator is
- (a) + (b) .
(c) & (d) @
10. The function that is used to test the server connection is
- (a) mySql – ping ()
(b) mySql – info ()
(c) mySql – dbs ()
(d) mySql – stat ()

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Explain how to embed PHP in HTML with example.

Or

- (b) Explain while loop and do loop.

12. (a) Explain grouping form selections with arrays.

Or

- (b) Explain how to manage sessions and use session variables.

13. (a) Explain how to check if a file exists.

Or

- (b) Explain locking files.

14. (a) Explain effectiveness of MySQL.

Or

- (b) Explain aggregate functions.

15. (a) Explain debugging and diagnostic functions.

Or

(b) Explain database connectivity.

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 features of PHP.

Or

(b) Explain various operators used in PHP.

17. (a) Explain how to create user defined functions.

Or

(b) Explain how to read data from a file and write data to a file.

18. (a) Explain reading text from a file using fgets and reading character using fgetc.

Or

(b) Explain reading and writing binary files.

19. (a) Explain full text searching in detail.

Or

(b) Explain retrieving data in detail.

20. (a) Explain processing result sets of queries.

Or

(b) Explain validating user input through application layer.

(6 Pages)

Reg. No. :

**Code No. : 20614 E Sub. Code : SSCS4A/
SSSE4A**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2021.

Fourth Semester

Computer Science/Software Engineering

Skill Based Subject - ANDROID PROGRAMMING

(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. Find the odd one out.
 - (a) Donut
 - (b) Kitkat
 - (c) Black Forest
 - (d) Marshmallow

2. _____ is an invaluable tool that shows you contextual options for completing the piece of code that you are trying to write
- (a) Activity (b) Code completion
(c) Intent (d) Fragments
3. When a user kills an activity by tapping the back button, _____ method is called
- (a) onCreate() (b) onPause()
(c) onDestroy() (d) onCreate()
4. What is used to navigate between activities?
- (a) intents (b) fragments
(c) class (d) all the above
5. A _____ is used to group and arrange views visually on the screen.
- (a) View Group (b) Container
(c) Intent (d) Layout

6. Which of the following units is recommended for specifying font sizes?
- (a) dp (b) pt
(c) sp (d) px
7. The views used to display a long list of items are _____
- (a) basic views (b) list views
(c) picker views (d) button views
8. The `AutoCompleteTextView` is a subclass of _____
- (a) Edit Text (b) Text View
(c) Set Adapter (d) All the above
9. The _____ shows items in a two dimensional scrolling grid.
- (a) Image View (b) Web View
(c) Context Menu (d) Grid View
10. To convert a character stream into a byte stream, an instance of the _____ class is used.
- (a) File Output Stream
(b) Input Stream Reader
(c) Output Stream Writer
(d) Open File Output

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Discuss the features of Android.

Or

- (b) Explain the Android developer community.

12. (a) How do you create an activity? Explain.

Or

- (b) Discuss on passing data using an Intent Object.

13. (a) What are the Layouts available in Android?
List them.

Or

- (b) How do you persist state information during changes in configuration?

14. (a) Explain Date Picker View.

Or

- (b) Describe the usage of Dialog Fragment.

15. (a) How do you display an Options Menu in Android? Explain.

Or

- (b) Discuss on retrieving and modifying the preferences values.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Describe the Architecture of Android.

Or

- (b) Give an account on publishing an Android Application.

17. (a) Explain about displaying a Dialog Window.

Or

- (b) With an example, explain the life cycle of a fragment.

18. (a) Discuss on managing changes to screen orientation with example.

Or

- (b) How to add action items to the Action Bar? Explain with example.

19. (a) Write note on Progress Bar View.

Or

(b) Discuss about Spinner View.

20. (a) Why do you need Image Switcher? Explain it with example.

Or

(b) How do you save data to external storage? Explain.

1. A large number of several computer networks spreading across the world is -----.

- a. Internet b. www c. wide area network d. none

பெரும் எண்ணிக்கையிலான உலகம் முழுவதும் பல கணினி நெட்வொர்க்குகள் உள்ளது -----.

- அ. இணையம் ஆ. www இ. பரந்த பகுதி நெட்வொர்க் ஈ. எதுவும் இல்லை

2. IRC is -----.

- a. Internet Relay Chat b. Internal Relay Chat c. Internet Relay Chat d. none

ஐ. ஆர்.சி என்பது -----.

அ. இணைய ரிலே அரட்டை

ஆ. உள் ரிலே அரட்டை

இ. இணைய ரிலே அரட்டை

ஈ. எதுவும் இல்லை

3. Devices are required to access the internet through television sets

- a. internet television translator b. set-top boxes c. both a & b d. none

தொலைக்காட்சி பெட்டிகள் மூலம் இணையத்தை அணுக சாதனங்கள் தேவை

அ. இணைய தொலைக்காட்சி மொழிபெயர்ப்பாளர்

ஆ. செட்-டாப் பெட்டிகள்

இ. a & b இரண்டும்

ஈ. எதுவும் இல்லை

4. ----- is a set of rules that enable the exchange of information between computers.

- a. protocols b. band width c. interface d. none

----- என்பது கணினிகளுக்கு இடையில் தகவல் பரிமாற்றத்தை செயல்படுத்தும் விதிகளின் தொகுப்பாகும்.

அ. நெறிமுறைகள் ஆ. இசைக்குழு அகலம் இ. இடைமுகம் ஈ. எதுவும் இல்லை

5. The first page of a web site is -----.

- a. front page b. home page c. web site d. none

ஒரு வலைத்தளத்தின் முதல் பக்கம் -----.

அ. முதல் பக்கம்

ஆ. முகப்பு பக்கம்

இ. வலைத்தளம்

ஈ. எதுவும் இல்லை

6. Webalizer is an example of-----.

- a. statics analyzer package b. accounting package c. database d. none

. வெபலைசர் ----- க்கு ஒரு எடுத்துக்காட்டு.

அ. புள்ளிவிவர பகுப்பாய்வி தொகுப்பு

ஆ. கணக்கியல் தொகுப்பு

இ. தரவுத்தளம்

ஈ. எதுவும் இல்லை

7. ___ is transaction between the customer and seller.

- a. B2C b. B2B c. C2B d. none

___ என்பது வாடிக்கையாளருக்கும் விற்பனையாளருக்கும் இடையிலான பரிவர்த்தனை.

- . B2C ஆ. பி 2 பி இ. சி 2 பி . ஈ. எதுவும் இல்லை

8. WAP stands for

- a. Wireless Application Protocol b. Wired application Protocol
c. Wireless Application Procedure d. none

. WAP என்பது

- அ. வயர்லெஸ் அப்ளிகேஷன் புரோட்டோகால் ஆ. கம்பி பயன்பாடு நெறிமுறை
இ. வயர்லெஸ் விண்ணப்ப நடைமுறை ஈ. எதுவும் இல்லை

9. Blog sites are hosted by -----.

- a. service provider .b. protocols c. ISDN d. none

வலைப்பதிவு தளங்கள் ----- ஆல் வழங்கப்படுகின்றன.

- அ. சேவை வழங்குநர் . ஆ. நெறிமுறைகள் இ. ISDN ஈ. எதுவும் இல்லை

10. IDS stands for

- a. Intrusion Detection System b. Integrated digital System
c. Integrated digital Software d. none

IDS என்பது

- அ. ஊடுருவல் கண்டறிதல் அமைப்பு ஆ. ஒருங்கிணைந்த டிஜிட்டல் அமைப்பு
இ. ஒருங்கிணைந்த டிஜிட்டல் மென்பொருள் ஈ. எதுவும் இல்லை

Part B (5 x 5 = 25 Marks)

Answer all Questions, Choosing either (a) or (b), Each answer should not exceed 250 words

11. a. Explain any two network technologies.

அ. இரண்டு பிணைய தொழில்நுட்பங்களையும் விளக்குங்கள் OR

b. Write short notes on E-mail.

ஆ. மின்னஞ்சலில் சிறு குறிப்புகளை எழுதுங்கள்

12a. List the advantages of E-mail.

அ. மின்னஞ்சலின் நன்மைகளை பட்டியலிடுங்கள் OR

b Write about URL.

ஆ. URL பற்றி சிறு குறிப்புகளை எழுதுங்கள்

13a. Write short note on Front page.

அ. முதல் பக்கம் - சிறு குறிப்பை எழுதுங்கள் OR

b. How to analyze Visitor statics on the internet.

ஆ. இணையத்தில் பார்வையாளர் புள்ளிவிவரங்களை எவ்வாறு பகுப்பாய்வு செய்வது?

14a. Write about M-Commerce.

அ. எம்-காமர்ஸ் பற்றி எழுதுங்கள் OR

b.Explain issues of E-commerce

ஆ. ஈ-காமர்ஸின் சிக்கல்கள்

!5a. Describe the advantages of Blogs

அ. வலைப்பதிவுகளின் நன்மைகளை விவரிக்கவும்

b. Write note on cyber squatting .

ஆ. squatting பற்றி எழுதுங்கள்

Part C (5 x 8 = 40 Marks)

Answer all Questions, Choosing either (a) or (b), Each answer should not exceed 600 words

16a. Explain architecture of the internet

அ. இணையத்தின் கட்டமைப்பை விளக்குங்கள்

b.. Write notes on

i. IRC ii News groups

. டி.என்.எஸ்வை விளக்குங்கள்

குறிப்புகளை எழுதவும்

i. ஐ.ஆர்.சி ii செய்தி குழுக்கள்

17a. Explain DNS

அ. டி.என்.எஸ்வை விளக்குங்கள்

b. Write short note on

i Mail transfer protocol

ii. Internet explorer

ஆ. சிறு குறிப்பை எழுதுங்கள்

i அஞ்சல் பரிமாற்ற நெறிமுறை

ii. இணைய ஆய்வாளர்

18a. Explain website promoting methods.

அ. வலைத்தள ஊக்குவிக்கும் முறைகளை விளக்குங்கள்.

b. Write about structure of websites.

ஆ. வலைத்தளங்களின் கட்டமைப்பை எழுதுங்கள் .

19a. What is the business relationship in the internet.

அ. இணையத்தில் வணிக உறவு என்ன

b. Explain marketing strategies on the web.

ஆ. வலையில் சந்தைப்படுத்தல் உத்திகளை விளக்குங்கள்

20a. Briefly describe the steps for blogging.

அ. வலைப்பதிவிற்கான படிகளை சுருக்கமாக விவரிக்கவும் .

b. Discuss about viruses and worms

ஆ. வைரஸ்கள் மற்றும் புழுக்கள் பற்றி விவாதிக்கவும்

1. A large number of several computer networks spreading across the world is -----.

- a. Internet b. www c. wide area network d. none

பெரும் எண்ணிக்கையிலான உலகம் முழுவதும் பல கணினி நெட்வொர்க்குகள் உள்ளது -----.

- அ. இணையம் ஆ. www இ. பரந்த பகுதி நெட்வொர்க் ஈ. எதுவும் இல்லை

2. IRC is -----.

- a. Internet Relay Chat b. Internal Relay Chat c. Internet Relay Chat d. none

ஐ. ஆர்.சி என்பது -----.

- அ. இணைய ரிலே அரட்டை ஆ. உள்ளிணைய அரட்டை

இ. இணைய ரிலே அரட்டை

ஈ. எதுவும் இல்லை

3. Devices are required to access the internet through television sets

- a. internet television translator b. set-top boxes c. both a & b d. none

தொலைக்காட்சி பெட்டிகள் மூலம் இணையத்தை அணுக சாதனங்கள் தேவை

- அ. இணைய தொலைக்காட்சி மொழிபெயர்ப்பாளர் ஆ. செட்-டாப் பெட்டிகள்

இ. a & b இரண்டும் ஈ. எதுவும் இல்லை

4. ----- is a set of rules that enable the exchange of information between computers.

- a. protocols b. band width c. interface d. none

----- என்பது கணினிகளுக்கு இடையில் தகவல் பரிமாற்றத்தை செயல்படுத்தும் விதிகளின் தொகுப்பாகும்.

- அ. நெறிமுறைகள் ஆ. இசைக்குழு அகலம் இ. இடைமுகம் ஈ. எதுவும் இல்லை

5. The first page of a web site is -----.

- a. front page b. home page c. web site d. none

ஒரு வலைத்தளத்தின் முதல் பக்கம் -----.

- அ. முதல் பக்கம் ஆ. முகப்பு பக்கம் இ. வலைத்தளம் ஈ. எதுவும் இல்லை

6. Webalizer is an example of-----.

- a. statics analyzer package b. accounting package c. database d. none

. வெபலைசர் ----- க்கு ஒரு எடுத்துக்காட்டு.

அ. புள்ளிவிவர பகுப்பாய்வி தொகுப்பு

ஆ. கணக்கியல் தொகுப்பு

இ. தரவுத்தளம்

ஈ. எதுவும் இல்லை

7. ___ is transaction between the customer and seller.

- a. B2C b. B2B c. C2B d. none

___ என்பது வாடிக்கையாளருக்கும் விற்பனையாளருக்கும் இடையிலான பரிவர்த்தனை.

- . B2C ஆ. பி 2 பி இ. சி 2 பி . ஈ. எதுவும் இல்லை

8. WAP stands for

- a. Wireless Application Protocol b. Wired application Protocol
c. Wireless Application Procedure d. none

. WAP என்பது

- அ. வயர்லெஸ் அப்ளிகேஷன் புரோட்டோகால் ஆ. கம்பி பயன்பாடு நெறிமுறை
இ. வயர்லெஸ் விண்ணப்ப நடைமுறை ஈ. எதுவும் இல்லை

9. Blog sites are hosted by -----.

- a. service provider .b. protocols c. ISDN d. none

வலைப்பதிவு தளங்கள் ----- ஆல் வழங்கப்படுகின்றன.

- அ. சேவை வழங்குநர் . ஆ. நெறிமுறைகள் இ. ISDN ஈ. எதுவும் இல்லை

10. IDS stands for

- a. Intrusion Detection System b. Integrated digital System
c. Integrated digital Software d. none

IDS என்பது

- அ. ஊடுருவல் கண்டறிதல் அமைப்பு ஆ. ஒருங்கிணைந்த டிஜிட்டல் அமைப்பு
இ. ஒருங்கிணைந்த டிஜிட்டல் மென்பொருள் ஈ. எதுவும் இல்லை

Part B (5 x 5 = 25 Marks)

Answer all Questions, Choosing either (a) or (b), Each answer should not exceed 250 words

11. a. Explain any two network technologies.

அ. இரண்டு பிணைய தொழில்நுட்பங்களையும் விளக்குங்கள் OR

b. Write short notes on E-mail.

ஆ. மின்னஞ்சலில் சிறு குறிப்புகளை எழுதுங்கள்

12a. List the advantages of E-mail.

அ. மின்னஞ்சலின் நன்மைகளை பட்டியலிடுங்கள் OR

b Write about URL.

ஆ. URL பற்றி சிறு குறிப்புகளை எழுதுங்கள்

13a. Write short note on Front page.

அ. முதல் பக்கம் - சிறு குறிப்பை எழுதுங்கள் OR

b. How to analyze Visitor statics on the internet.

ஆ. இணையத்தில் பார்வையாளர் புள்ளிவிவரங்களை எவ்வாறு பகுப்பாய்வு செய்வது?

14a. Write about M-Commerce.

அ. எம்-காமர்ஸ் பற்றி எழுதுங்கள் OR

b.Explain issues of E-commerce

ஆ. ஈ-காமர்ஸின் சிக்கல்கள்

!5a. Describe the advantages of Blogs

அ. வலைப்பதிவுகளின் நன்மைகளை விவரிக்கவும்

b. Write note on cyber squatting .

ஆ. squatting பற்றி எழுதுங்கள்

Part C (5 x 8 = 40 Marks)

Answer all Questions, Choosing either (a) or (b), Each answer should not exceed 600 words

16a. Explain architecture of the internet

அ. இணையத்தின் கட்டமைப்பை விளக்குங்கள்

b.. Write notes on

i. IRC ii News groups

. டி.என்.எஸ்வை விளக்குங்கள்

குறிப்புகளை எழுதவும்

i. ஐ.ஆர்.சி ii செய்தி குழுக்கள்

17a. Explain DNS

அ. டி.என்.எஸ்வை விளக்குங்கள்

b. Write short note on

i Mail transfer protocol

ii. Internet explorer

ஆ. சிறு குறிப்பை எழுதுங்கள்

i அஞ்சல் பரிமாற்ற நெறிமுறை

ii. இணைய ஆய்வாளர்

18a. Explain website promoting methods.

அ. வலைத்தள ஊக்குவிக்கும் முறைகளை விளக்குங்கள்.

b. Write about structure of websites.

ஆ. வலைத்தளங்களின் கட்டமைப்பை எழுதுங்கள் .

19a. What is the business relationship in the internet.

அ. இணையத்தில் வணிக உறவு என்ன

b. Explain marketing strategies on the web.

ஆ. வலையில் சந்தைப்படுத்தல் உத்திகளை விளக்குங்கள்

20a. Briefly describe the steps for blogging.

அ. வலைப்பதிவிற்கான படிகளை சுருக்கமாக விவரிக்கவும் .

b. Discuss about viruses and worms

ஆ. வைரஸ்கள் மற்றும் புழுக்கள் பற்றி விவாதிக்கவும்

Reg. No.....

Code No: 20616B

Sub. Code: SNCS3B/SNSE3B

U.G. (CBCS) DEGREE EXAMINATION, APRIL 2021

THIRD SEMESTER

COMPUTER SCIENCE/SOFTWARE ENGINEERING
NON MAJOR ELECTIVE-BASIC PROGRAMMING DESIGN

(For those who joined in July 2017 onwards)

Time: Three hours

Maximum: 75 marks

Part - A (10 X 1 = 10 marks)

Answer all questions, choose the correct answer

1. ஒரு நிரலில் சொற்பொருள் மற்றும் தொடரியல் பிழைகள் சரிபார்க்கப்படுகின்றன

- (அ) குறியீட்டு கட்டம் (ஆ) சோதனை கட்டம்
(இ) செயல்படுத்தல் கட்டம் (ஈ) பகுப்பாய்வு கட்டம்

The semantic and syntax errors in a program are checked in

- (a) Coding Phase (b) Testing Phase
(c) Implementation Phase (d) Analysis Phase

2. பாய்வு விளக்கப்படத்தில் உள்ள வைர வடிவ சின்னம் குறிக்கிறது

- (அ) செயலாக்க (ஆ) இணைப்பிகள்
(இ) முடிவு (ஈ) தொடக்கம்

The diamond shape symbol in the flowchart signifies

- (a) Processing (b) Connectors
(c) Decision (d) Start

3. வெள்ளை பெட்டி சோதனை என்றும் அழைக்கப்படுகிறது

- (அ) கண்ணாடி பெட்டி சோதனை (ஆ) செயல்பாட்டு சோதனை
(இ) பெட்டி சோதனை திறக்க (ஈ) கட்டமைப்பு சோதனை

White box testing is also known as

- (a) Glass box testing (b) Functional testing
(c) Open box testing (d) Structural testing.

4. நிரலாக்க கருவிகள் உதவுகின்றன

- (அ) படிக்கக்கூடிய குறியீட்டை உருவாக்குகிறது (ஆ) நிரல் தர்க்கத்தை எளிதாக்குகிறது
(இ) நிரலின் அளவைக் குறைத்தல் (ஈ) மாற்றமின்றி

Programming tools help in

- (a) Producing readable code (b) Making the program logic easier
(c) Reducing the size of program (d) without modification

5. வணிக பயன்பாட்டில் பயன்படுத்தப்படும் மொழி

- (அ) FORTRAN (ஆ) Java
(இ) COBOL (ஈ) ALGOL

The Language used in Business application is

- (a) FORTRAN (b) Java
(c) COBOL (d) ALGOL

6. COBOL ஒரு _____ கருதப்படுகிறது

- (அ) 1GL (ஆ) 3GL
(இ) 2GL (ஈ) 5GL

COBOL is considered to be a _____

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

7. கணினி மென்பொருள் எழுதப்பட்ட நிரல்களைக் கொண்டுள்ளது

- (அ) குறைந்த அளவிலான மொழிகள் (ஆ) உயர்மட்ட மொழிகள்
(இ) இயற்கை மொழிகள் (ஈ) நடுத்தர அளவிலான மொழிகள்

System software comprises programs written in

- (a) Low-level languages (b) High-level languages
(c) Natural languages (d) Middle-level languages

8. பின்வருவனவற்றில் கணினி மென்பொருள் எது?

- (அ) MS-Word (ஆ) Tally
(இ) MS-Powerpoint (ஈ) Operating System

Which of the following is system software?

- (a) MS-Word (b) Tally
(c) MS-PowerPoint (d) Operating System

9. URL என்பது ஆகும்

- (அ) கணினி மென்பொருள் நிரல்
(ஆ) ஒரு வகை வலை சேவையகம் (இ) உலகளாவிய வலையில் 'பக்கம் ஆவணத்தின் முகவரி'
(ஈ) கற்றலுக்கான வரம்பற்ற வளங்களுக்கான சுருக்கம்

URL is

- (a) A computer software program
(b) A type of web server
(c) The address of a document of 'page' on the World Wide Web
(d) An acronym for Unlimited Resources for Learning

10. நண்பருடன் உடனடி நிகழ்நேர தொடர்புக்கு நீங்கள் எதைப் பயன்படுத்துவீர்கள்?

(அ) E-Mail

(ஆ) IRC

(இ) Usenet

(ஈ) A Mailing List

What would you use for immediate, real-time communication with a friend?

(a) E-Mail

(b) IRC

(c) Usenet

(d) A Mailing List

PART B – (5 x 5 = 25 Marks)

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

11. (a) ஒரு பாய்வு விளக்கப்படத்தை வரையறுக்கவும். பாய்வு விளக்கப்படங்களைப் பயன்படுத்துவதற்கான சில முக்கியமான காரணங்களை பட்டியலிடுக.

Define a Flowchart. List some important reasons for using flowcharts

Or

(b) குடோ குறியீட்டைப் பயன்படுத்துவதன் நன்மைகள் மற்றும் தீமைகள் என்ன?

What are the advantages and disadvantages of using a Pseudocode?

12. (a) பின்வருவனவற்றைப் பற்றி விவாதிக்கவும்

I) நடைமுறை நிரலாக்க II) மட்டு நிரலாக்க

Discuss the following: (i) Procedural Programming (ii) Modular Programming

Or

(b) பிளாக் பாக்ஸ் சோதனையின் நன்மைகள் மற்றும் தீமைகள் என்ன?

What are the advantages and disadvantages of Black Box Testing.

13. (a) நிரலாக்க மொழிகளின் வகைப்பாட்டை சுருக்கமாக விவரிக்கவும்.

Briefly describe the classification of programming languages?

(b) ஒரு கம்பைலர் மற்றும் மொழிபெயர்ப்பாளருக்கு இடையில் வேறுபடுத்துக.

Differentiate between a Compiler and Interpreter.

14. (a) மென்பொருள் என்ற சொல்லால் நீங்கள் என்ன புரிந்து கொள்கிறீர்கள்? ஆய்க.

What do you understand by the term software? Examine.

Or

(b) சுருக்கமாக சில கணினி பயன்பாடுகளை பகுப்பாய்வு செய்க

Analyze briefly few system utilities.

15. (a) சிறு குறிப்பு வரைக.
(a) Chatting (b) Video conferencing

Write short note on:

- (a) Chatting (b) Video conferencing

Or

- (b) மின்னஞ்சலைப் பயன்படுத்துவதன் சில நன்மைகள் மற்றும் தீமைகள் பட்டியலிடுக
List some advantages and disadvantages of using E-mail.

PART C – (5 x 8 = 40 Marks)

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

16. (a) தொகுதி வரைபடத்தின் உதவியுடன் நிரல் மேம்பாட்டு சுழற்சியை தெளிவுபடுத்துக.
Elucidate program development cycle with the help of block diagram.

Or

- (b) ஒரு வரைபடத்தின் கட்டமைப்பைப் பற்றி விவாதிக்கவா? பாய்வு விளக்கப்படத்தை உருவாக்கும் போது என்ன வழிகாட்டுதல்களைப் பின்பற்ற வேண்டும்.

Discuss the structure of a flowchart? What guideline should be followed while making flowchart?

17. (a) இரண்டு வகையான பிழைகளை சுருக்கமாக கணக்கிடுக. இந்த பிழைகளை சரிசெய்ய பின்பற்ற வேண்டிய பல்வேறு அணுகுமுறைகளை ஆராய்க.

Enumerate briefly the two types of errors. Examine the various approaches which should be followed to correct these errors.

Or

- (b) ஒரு நல்ல திட்டத்தின் பண்புகளை விளக்குங்கள்

Illustrate the characteristics of a good program.

18. (a) ஒரு உயர் மட்ட மொழி இயந்திர மொழியில் எவ்வாறு மொழிபெயர்க்கப்பட்டுள்ளது என்பதை விளக்குக.

Illuminate how a high-level language is translated into machine language.

Or

- (b) எந்தவொரு பிரபலமான உயர் மட்ட மொழிகளையும் பற்றி விரிவாக எழுதுக

Paraphrase in detail about any six popular high-level languages.

19. (a) மென்பொருளைப் பிரிக்கக்கூடிய வகைகளைப் பற்றி விரிவாகச் சுட்டிகாட்டுக.
Point out in detail about the categories in which software can be divided.

Or

(b) கணினி மேலாண்மை திட்டங்கள் உவை என்பதை தருக.

Clear up what are System Management Programs?

20 (a) இணையம் என்றால் என்ன? அது எவ்வாறு உருவானது?
What is Internet? How did it evolve?

Or

(b) இணையம் வழங்கும் எந்த மூன்று சேவைகளையும் மொழிபெயர்க்க.

Translate any three services provided by the Internet.

Reg. No. :

Code No. : 20617 B **Sub. Code : SNCS 4 A /**
SNSE 4 A

U.G. (CBCS) DEGREE EXAMINATION, APRIL 2021.

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. _____ கணித சமன்பாடுகளை ஆதரிக்கின்றன.

(அ) HTML 0

(ஆ) HTML 1

(இ) HTML 2

(ஈ) HTML 3

_____ supports mathematical equations.

(a) HTML 0

(b) HTML 1

(c) HTML 2

(d) HTML 3

2. Hot textஐ நாம் கிளிக் செய்யும்பொழுது மற்றொரு HTML ஆவணம் திறக்கின்றது. இதை _____ என்று அழைக்கிறோம்.

(அ) hyperlink (ஆ) hot text

(இ) preformatted text (ஈ) formatted text

When we click a hot text another HTML document is opened. This is called

(a) hyperlink (b) hot text

(c) preformatted text (d) formatted text

3. _____ என்பது header section-ன் முக்கியமான பல பகுதிகளில் ஒன்றாகும்.

(அ) Banner (ஆ) Body

(இ) Title (ஈ) Base

_____ is one of the important components of the header section.

(a) Banner (b) Body

(c) Title (d) Base

4. _____ பண்பு, என்னும் குறிப்புக்குள் எழுத்து வகையின் பெயரைக் கொடுக்கும்.

- (அ) color (ஆ) size
(இ) face (ஈ) align

In tag, _____ attribute contains the name of the font.

- (a) color (b) size
(c) face (d) align

5. பட்டியல் எண்களுடன் தோன்றினால் _____ என்று அழைக்கப்படுகிறது.

- (அ) unordered list (ஆ) bullets
(இ) nested list (ஈ) ordered list

List which appears with numbers are called

- (a) unordered list (b) bullets
(c) nested list (d) ordered list

6. பட்டியலில் _____, _____ குறிப்புகள் தகவல்களைக் கொடுக்கப் பயன்படுகிறது.

- (அ) <table>, </table> (ஆ) <tr>, </tr>
(இ) <th>, </th> (ஈ) <td>, </td>

_____, _____ tags are used to give entries in the row of a table.

- (a) <table>, </table> (b) <tr>, </tr>
(c) <th>, </th> (d) <td>, </td>

7. FRAMESET குறிப்புக்குள் இருக்கும் _____ பண்பு செங்குத்தாக உள்ள சட்டங்களை உருவாக்கப் பயன்படுகிறது.

- (அ) rows (ஆ) cols
(இ) size (ஈ) src

_____ attributes in <FRAMESET> tag is used to create vertical frames.

- (a) rows (b) cols
(c) size (d) src

8. பட்டியலில் உள்ள விருப்பங்களிலிருந்து ஏதேனும் ஒன்றை தேர்வு செய்ய _____ பயன்படுகிறது.

- (அ) Radio Buttons (ஆ) Text Fields
(இ) Check Boxes (ஈ) Text Areas

_____ are used to select only one from a list of options available.

- (a) Radio Buttons (b) Text Fields
(c) Check Boxes (d) Text Areas

9. _____ல், HTML ஆவணத்தின் முக்கிய பாகத்தினுள் நவீனத்தின் வகையானது வரையறுக்கப்பட்டுள்ளது.

- (அ) External style sheet
(ஆ) In – line style
(இ) Internal style sheet
(ஈ) Multiple style

In the _____, the type style is defined within the body of the HTML document it self

- (a) External style sheet
(b) In – line style
(c) Internal style sheet
(d) Multiple style

10. ஒன்றுக்கும் மேற்பட்ட நவீனங்களை ஒரு குறிப்பில் வரையறுக்க இயலும் என்பதை _____ என்று கூறலாம்.

- (அ) Style sheets
- (ஆ) Multiple styles
- (இ) Internal style sheets
- (ஈ) External style sheets

It is possible to define several styles for a tag. It is known as _____.

- (a) Style sheets
- (b) Multiple styles
- (c) Internal style sheets
- (d) External style sheets

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (அ) HTML ன் வரலாற்றை விவரி.

Explain the History of HTML.

Or

(ஆ) ANCHOR குறிப்பை உதாரணத்துடன் விவரி.

Explain ANCHOR tag with example.

12. (அ) வண்மையான இணைய பக்கத்தை எவ்வாறு உருவாக்கலாம்?

How to create a colorful Web page?

Or

- (ஆ) ALIGNING THE HEADINGS — குறிப்பு வரைக.

Write a note on ALIGNING THE HEADINGS.

13. (அ) Unordered List -ஐ விவரி.

Explain Unordered List.

Or

- (ஆ) Width of the Table and Cells- ஐப் பற்றி எழுதுக.

Write about Width of the Table and Cells.

14. (அ) <FRAMESET> குறிப்பின் பண்புகளை விவரிக்க.

Explain the attributes of <FRAMESET> tag.

Or

- (ஆ) NESTED FRAMESETS விவரி.

Explain the NESTED FRAMESETS.

15. (அ) DEFINING STYLES பற்றி குறிப்பு எழுதுக.

Write about DEFINING STYLES.

Or

(ஆ) Internal Style Sheet பற்றி விவரி.

Explain about Internal Style Sheet.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (அ) HTML documents ஐ விரிவாக விவரி.

Explain in detail about HTML documents.

Or

(ஆ) உன்னைப் பற்றி கூறும் ஒரு HTML ஆவணத்தை உருவாக்குக.

Create a HTML document which tells about you.

17. (அ) TAB Settings -ஐப் பற்றி விவரிக்க.

Explain about TAB Settings.

Or

(ஆ) Images மற்றும் Pictures பற்றி விவரிக்க.

Explain about Images and Pictures.

18. (அ) Ordered list ஐ விவரி.

Explain Ordered list.

Or

(ஆ) Cells Spanning Multiple rows/columns
என்பதைப் பற்றி குறிப்பு வரைக.

Write a note on Cells Spanning Multiple
rows/columns.

19. (அ) <FRAME>குறிப்பின் பண்புகளை விவரி.

Explain the attributes of <FRAME> tag.

Or

(ஆ) பறவைகளுக்கான இணைய பக்கங்களை
உருவாக்குக.

Develop web pages for Birds.

20. (அ) Multiple Styles பற்றி எழுதுக.

Write about Multiple Styles.

Or

(ஆ) Elements of Styles பற்றி எழுதுக.

Write about Elements of Styles.

(6 pages)

Reg. No. :

**Code No. : 20617 E Sub. Code : SNCS 4 A /
SNSE 4 A**

U.G. (CBCS) DEGREE EXAMINATION, APRIL 2021.

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. _____ supports mathematical equations.
(a) HTML 0 (b) HTML 1
(c) HTML 2 (d) HTML 3

2. When we click a hot text another HTML document is opened. This is called
(a) hyperlink (b) hot text
(c) preformatted text (d) formatted text

3. _____ is one of the important components of the header section.
- (a) Banner (b) Body
(c) Title (d) Base
4. In tag, _____ attribute contains the name of the font.
- (a) color (b) size
(c) face (d) align
5. List which appears with numbers are called
- (a) unordered list (b) bullets
(c) nested list (d) ordered list
6. _____, _____ tags are used to give entries in the row of a table.
- (a) <table>, </table> (b) <tr>, </tr>
(c) <th>, </th> (d) <td>, </td>
7. _____ attributes in <FRAMESET> tag is used to create vertical frames.
- (a) rows (b) cols
(c) size (d) src

8. _____ are used to select only one from a list of options available.
- (a) Radio Buttons (b) Text Fields
(c) Check Boxes (d) Text Areas
9. In the _____, the type style is defined within the body of the HTML document it self
- (a) External style sheet
(b) In – line style
(c) Internal style sheet
(d) Multiple style
10. It is possible to define several styles for a tag. It is known as _____.
- (a) Style sheets
(b) Multiple styles
(c) Internal style sheets
(d) External style sheets

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 History of HTML.

Or

- (b) Explain ANCHOR tag with example.

12. (a) How to create a colorful Web page?

Or

- (b) Write a note on ALIGNING THE HEADINGS.

13. (a) Explain Unordered List.

Or

- (b) Write about Width of the Table and Cells.

14. (a) Explain the attributes of <FRAMESET> tag.

Or

- (b) Explain the NESTED FRAMESETS.

15. (a) Write about DEFINING STYLES.

Or

(b) Explain about Internal Style Sheet.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Explain in detail about HTML documents.

Or

(b) Create a HTML document which tells about you.

17. (a) Explain about TAB Settings.

Or

(b) Explain about Images and Pictures.

18. (a) Explain Ordered list.

Or

(b) Write a note on Cells Spanning Multiple rows/columns.

19. (a) Explain the attributes of <FRAME> tag.

Or

(b) Develop web pages for Birds.

20. (a) Write about Multiple Styles.

Or

(b) Write about Elements of Styles.

(8 pages)

Reg. No. :

Code No. : 20618 B **Sub. Code : SNCS 4 B/
SNSE 4 B**

U.G. (CBCS) DEGREE EXAMINATION, APRIL 2021.

Fourth Semester

Computer Science/Software Engineering

Non-Major Elective — PROGRAMMING IN C

(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. C மொழியில் உபயோகப்படுத்தப்படும் ஒரு செயற்கூறு _____ நிரல் எங்கு தொடங்குகிறது என்று கூறவும்.

(அ) void ()

(ஆ) cin

(இ) main ()

(ஈ) count ()

_____ is the special function used by the C, to tell the computer where the program starts.

(a) void

(b) cin

(c) main ()

(d) count ()

2. C திட்டத்தில் உள்ள அனைத்து கூற்றுகளும் _____ல் முடிக்க வேண்டும்.

(அ) அரைப்புள்ளி (ஆ) முக்காற் புள்ளி

(இ) காற் புள்ளி (ஈ) முற்றுப் புள்ளி

Every statement in C end with _____.

- (a) semicolon (b) colon
(c) comma (d) Deriod

3. Flag $=(x < 0)? 0 = 1$ ல் $x = 0$ எனில் flag = _____.

(அ) 0 (ஆ) 1

(இ) 2 (ஈ) 3

If flag $=(x < 0)? 0 = 1$ and if $x = 0$, the value of flag is _____.

- (a) 0 (b) 1
(c) 2 (d) 3

4. Cயில் கட்டுப்படுத்தாத கட்டுப்பாட்டு கட்டளை _____ ஆகும்.

(அ) goto (ஆ) if

(இ) for (ஈ) none

The unconditional control statement in C is _____.

- (a) goto (b) if
(c) for (d) none

5. C-யில் _____ சுற்றிகள் அனுமதிக்க படமாட்டாது.

- (அ) கூட்டு (ஆ) வெட்டு
(இ) தவிர்க்கும் (ஈ) ஏதுமில்லை

The _____ of loops is not allowed in C.

- (a) Nesting (b) Intersection
(c) Skipping (d) None

6. கீழ்க்கண்டவற்றுள் எது சரியான கூற்று?

- (அ) int a(10) (ஆ) float b [10,10]
(இ) char city [10] (ஈ) int total (10,10)

Which one of the following is a valid statement?

- (a) int a(10) (b) float b [10,10]
(c) char city [10] (d) int total (10,10)

7. ஒரு சரமாறியை எழுதுவதற்கான பொது அமைப்பு

- (அ) string – name [size]
(ஆ) char string – name[size]
(இ) char [size]
(ஈ) char string – name (size)

The general form of declaration of string variable is

- (a) string – name [size]
(b) char string – name[size]
(c) char [size]
(d) char string – name (size)

8. `x = 'a'; print f ("% d", x)` என்ற கட்டளைகள் திரையில்
_____ஐக் காட்டும்.

(அ) `x` (ஆ) `a`

(இ) `97` (ஈ) `none`

`x = 'a'; print f ("% d", x)` will display
_____ on the screen

(a) `x` (b) `a`

(c) `97` (d) `none`

9. ஒரு சார்பின் உள்ளே அறிவிக்கப்படும் மாறி
_____ மாறி ஆகும்.

(அ) முழுமையான

(ஆ) உள் இடம் சார்ந்த

(இ) நிலையான

(ஈ) ஏதுமில்லை

A variable declare inside a function is called
_____.

(a) global (b) local

(c) static (d) none

10. கணிதம் சம்மந்தமான கோவைகள் அடங்கிய காப்பு

(அ) conio.h (ஆ) string.h

(இ) math.h (ஈ) ஏதுமில்லை

The mathematical functions are found in

(a) conio.h (b) string.h

(c) math.h (d) none

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (அ) C-யில் செயலிகள் பற்றி ஓர் குறிப்பு வரைக.

Write short notes on operators in C.

Or

(ஆ) மாறிகளை வரையறு. அவைகள் எழுதுவதையும் துவக்க மதிப்பு செய்வதும் எவ்வாறு எனக் கூறு.

Define variables? How they are declared and initialized?

12. (அ) C-யில் IF கட்டளையை எடுத்துக்காட்டுடன் விவரி.

Explain if statement with example.

Or

- (ஆ) C-யில் break மற்றும் continue கட்டளையின் வேறுபாட்டை விவரி.

Describe the difference between break and continue statement in C.

13. (அ) For கூற்றினை உதாரணத்துடன் விவரி.

Explain For statement with example.

Or

- (ஆ) ஒரு பரிமாண தொடரில் தேக்கப்பட்டுள்ள எண்களின் கூட்டுத் தொகைக்கான திட்டம் ஒன்றினை எழுது.

Write a program to add the numbers stored in one dimensional array.

14. (அ) ஒரு சரமாறியை எவ்வாறு தொடக்க நிலைப்படுத்துவாய்?

How will you initialize a string variable?

Or

- (ஆ) இரண்டு சரங்களை எப்படி ஒன்றாக இணைப்பாய்?

How will you put two strings together?

15. (அ) C-சார்பின் பொது அமைப்பை எடுத்துக்காட்டுடன் விவரி.

Explain the general form of C functions with eg?

Or

- (ஆ) சார்பை பயன்படுத்தி மூன்று எண்களில் பெரிய எண்ணை கண்டுபிடிப்பதற்கான செயல் திட்டம் எழுதுக.

Write a C program to find the biggest of three numbers using function.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (அ) C-மாறிலிகளின் வகைகளை விளக்குக.

Explain various types of constants in C.

Or

- (ஆ) C-யில் விபர வகைகளை விவரி.

Explain data types in C.

17. (அ) C-யில் உள்/வெளி கட்டளைகளை விவரி.

Describe I/O statements in C.

Or

- (ஆ) Else- If ஏணி வாக்கியத்தின் இலக்கண அமைப்பையும் flow chart-யையும் உதாரணத்துடன் விளக்குக.

Write the syntax and flow chart for Else- If Ladder statement with example.

18. (அ) C-யில் while மற்றும் do-while கட்டளைகளை பற்றி விவரிக்கவும்.

Explain while and do-while statement in C.

Or

- (ஆ) கட்டுப்பாட்டு கூற்றுகளை பயன்படுத்தி $1 + x + x^2 + \dots + x^n$ ஐக் காண ஒரு நிரலை எழுதுக.

Write a C program to evaluate $1 + x + x^2 + \dots + x^n$ using control statements.

19. (அ) C-யில் மூன்று சரம் சார்ந்த சார்புகளை விவரி.

Explain about any three string handling function in C.

Or

- (ஆ) Terminal-ல் இருந்து கோவையை படித்தல் பற்றி ஒரு நிரல் C-ல் எழுதுக.

Write a C program to a string from the terminal.

20. (அ) C-யின் சார்பின் பலவகையான வகைகளை விவரித்து காட்டு.

Describe various categories of functions in C.

Or

- (ஆ) சார்பை பயன்படுத்தி முழு எண்களை வரிசைப்படுத்தலுக்கு நிரல் எழுதுக.

Write a program to sort an array of integers using function.

(6 pages)

Reg. No. :

**Code No. : 20618 E Sub. Code : SNCS 4 B/
SNSE 4 B**

U.G. (CBCS) DEGREE EXAMINATION, APRIL 2021.

Fourth Semester

Computer Science/Software Engineering

Non-Major Elective — PROGRAMMING IN C

(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. _____ is the special function used by the C, to tell the computer where the program starts.
(a) void () (b) cin
(c) main () (d) count ()
2. Every statement in C end with _____.
(a) semicolon (b) colon
(c) comma (d) Deriod

8. $x = a$; print f ("% d", x) will display _____
on the screen
- (a) x (b) a
(c) 97 (d) none
9. A variable declare inside a function is called _____.
- (a) global (b) local
(c) static (d) none
10. The mathematical functions are found in
- (a) conio - h (b) string -h
(c) math.h (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 notes on operators in C.
- Or
- (b) Define variables? How they are declared and initialized?
12. (a) Explain if statement with example.
- Or
- (b) Describe the difference between break and continue statement in C.

13. (a) Explain For statement with example.

Or

(b) Write a program to add the numbers stored in one dimensional array.

14. (a) How will you initialize a string variable?

Or

(b) How will you put two strings together?

15. (a) Explain the general form of C functions with eg?

Or

(b) Write a C program to find the biggest of three numbers using function.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Explain various types of constants in C.

Or

(b) Explain data types in C.

17. (a) Describe I/O statements in C.

Or

(b) Write the syntax and flow chart for Else- If Ladder statement with example.

18. (a) Explain while and do-while statement in C.

Or

(b) Write a C program to evaluate $1 + x + x^2 + \dots + x^n$ using control statements.

19. (a) Explain about any three string handling function in C.

Or

(b) Write a C program to a string from the terminal.

20. (a) Describe various categories of functions in C.

Or

(b) Write a program to sort an array of integers using function.

(6 pages)

Reg. No. :

Code No. : 20619 E **Sub. Code : SACS 11/
SASE 11/AACS 11/
AASE 11**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2021.

First Semester

Computer Science / Software Engineering — Allied

DISCRETE MATHEMATICS

(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. A relation R on a set A is _____ if whenever aRb and bRa then $a=b$.
 - (a) Reflexive
 - (b) Symmetric
 - (c) Antisymmetric
 - (d) Transitive

2. The relation $R=\{(1,2),(2,1),(2,3)\}$ on $A=\{1,2,3\}$ having the property.
- (a) R is both symmetric and antisymmetric
 - (b) R is neither symmetric nor antisymmetric
 - (c) R is transitive but RVR^{-1} is not transitive
 - (d) None of the above
3. The function from each element of a set to itself is called the _____.
- (a) identity function
 - (b) surjective function
 - (c) injective function
 - (d) None of the above
4. $INT(x)$ means
- (a) absolute value of x
 - (b) Modular Arithmetic
 - (c) integer value of x
 - (d) None of the above
5. $p \wedge q \equiv q \wedge p$ is _____ law.
- (a) Idem potent
 - (b) Associative
 - (c) Commutative
 - (d) None of the above.
6. Write the symbolic form of "It is not true that Erik reads Newsweek but not Time".
- (a) $\sim (p \wedge \sim q)$
 - (b) $\sim (p \vee \sim q)$
 - (c) $p \wedge \sim q$
 - (d) $\sim p \wedge \sim q$

7. Any $m \times n$ matrix that only one column is called a _____ matrix.
- (a) row (b) column
(c) scalar (d) unit
8. Inverse matrix exists only when the given matrix is _____.
- (a) singular (b) non singular
(c) scalar (d) none of the above
9. The path that begins and ends at the same vertex is called _____.
- (a) walk (b) circuit
(c) Bridge (d) None of the above
10. How many vertices do the graph have 16 edges and all vertices of degree 2?
- (a) 16 (b) 8
(c) 32 (d) 4

PART B — ($5 \times 5 = 25$ marks)

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

Each answer should not exceed 250 words.

11. (a) Let $A = \{1,2,3,4\}$, $B = \{a,b,c,d\}$, $C = \{x,y,z\}$ and the relations $R = \{(1,a), (2,d), (3,a), (3,b), (3,d)\}$ and $S = \{(b,x), (b,z), (c,y), (d,z)\}$. Write the matrix representation of M_R, M_S and $M_{R \circ S}$.

Or

- (b) Explain the properties of relation.

12. (a) Define one-to-one and onto function give examples.

Or

- (b) Let $f: R \rightarrow R$, $g: R \rightarrow R$ be defined by
 $f(x) = x + 1$, $g(x) = 2x^2 + 3$, then find
 $g \circ f, f \circ g$.

13. (a) Write a short note on basic logical connectives.

Or

- (b) Explain conditional and biconditional statements.

14. (a) If $A = \begin{bmatrix} 1 & 2 \\ 3 & -4 \end{bmatrix}$ then find $2A^2 - 3A + 5$ and A^3

Or

- (b) Find x, y, z, t when
$$3 \begin{bmatrix} x & y \\ z & t \end{bmatrix} = \begin{bmatrix} x & 6 \\ -1 & 2t \end{bmatrix} + \begin{bmatrix} 4 & x+y \\ z+t & 3 \end{bmatrix}$$

15. (a) Define regular graph and Bipartite graph.

Or

- (b) P.T. the number of odd degree vertices in a graph is always even.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Let $A = \{1, 2, \dots, 7\}$ and $R = \{(x, y) : x - y \text{ is divisible by } 3\}$. Show that R is an equivalence relation.

Or

- (b) If R and S are relations from A to B prove that

(i) $R^{-1} \leq S^{-1}$ when $R \leq S$

(ii) $(R \cap S)^{-1} = R^{-1} \cap S^{-1}$

(iii) $(R \cup S)^{-1} = R^{-1} \cup S^{-1}$

17. (a) Write in details of types of functions.

Or

- (b) Let x and y be two non empty sets and let $f : x \rightarrow y$ is an into mapping and also $A \leq X$, $B \leq X$ then prove that

(i) $f(A \cap B) \leq f(A) \cap f(B)$ and

(ii) $f^{-1}(A \cap B) = f^{-1}(A) \cap f^{-1}(B)$

18. (a) Construct the truth table for the statement.
 $(p \Rightarrow (q \Rightarrow r)) \Rightarrow ((p \Rightarrow q) \Rightarrow (p \Rightarrow r))$.

Or

(b) Establish the validity of the argument

$$p \Rightarrow r$$

$$\sim p \Rightarrow q$$

$$\underline{q \Rightarrow s}$$

$$\therefore \sim r \Rightarrow s$$

19. (a) Solve the system $x + 2y + z = 3$,
 $2x + 5y - z = -4$, $3x - 2y - z = 5$.

Or

- (b) Find the inverse of $A = \begin{bmatrix} 1 & 0 & 2 \\ 2 & -1 & 3 \\ 4 & 1 & 8 \end{bmatrix}$

20. (a) Draw a diagram for the graph $G(V, E)$
 $V = \{v_1, v_2, v_3, v_4, v_5, v_6\}$ and $E = \{(v_1, v_6), (v_1, v_4),$
 $(v_3, v_4), (v_3, v_4)(v_3, v_5), (v_4, v_4), (v_6, v_6)\}$ and also
find the degree of all the vertices.

Or

- (b) Explain the Adjacency matrix and incidence matrix of a graph and give an example.
-

(6 Pages)

Reg. No. :

**Code No. : 20620 E Sub. Code : SACS 21/
SASE 21**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2021.

Second Semester

Computer Science/Software Engineering — Allied

DIGITAL DESIGN

(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. The BCD code is sometimes referred to as _____.
 - (a) 8421
 - (b) 7421
 - (c) 6311
 - (d) 5421

2. The other name for gray code is _____.
- (a) Excess 3-code
 - (b) BCD
 - (c) Reflected code
 - (d) ASCII character code
3. A five variable map requires _____ squares.
- (a) 5
 - (b) 16
 - (c) 64
 - (d) 32
4. $x \oplus y =$ _____
- (a) $xy + x'y'$
 - (b) $x'y'$
 - (c) $xy' + x'y$
 - (d) $xx' + yy'$
5. What is the 2's complement of (1001) ?
- (a) 0110
 - (b) 1110
 - (c) 0101
 - (d) 0111
6. A circuit with many inputs but only one output is called a _____.
- (a) Demultiplexer
 - (b) Multiplexer
 - (c) Combinational circuit
 - (d) Sequential circuit

7. A basic RS flip-flop can be constructed by cross-coupling of which basic logic gates?
- (a) AND or OR gates
 - (b) XOR or XNOR gates
 - (c) NOR or NAND gates
 - (d) AND or NOR gates
8. A flip-flop circuits can be used for _____.
- (a) Counting (b) Scaling
 - (c) Rectification (d) Demodulation
9. _____ numbers are used extensively in micro process work.
- (a) Binary (b) Octal
 - (c) Decimal (d) Hexadecimal
10. Based on how binary information is entered or shifted out, shift registers are classified into _____ categories.
- (a) 2 (b) 3
 - (c) 4 (d) 5

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Convert the binary numbers to octal and hexadecimal :

(i) 1000.1001

(ii) 10000011.100011.

Or

- (b) Write short note on ASCII code.

12. (a) Explain the universal gates.

Or

- (b) Discuss about the Don't Care Conditions.

13. (a) Write short notes on Encoder.

Or

- (b) Discuss in detail, 2's Complement Arithmetic with example.

14. (a) Discuss the principles of RS flip-flops.

Or

- (b) How the Edge-Triggered JK flip-flops works? Explain.

15. (a) Explain Universal shift register.

Or

(b) Write a note on Serial-in-Parallel out.

PART C — ($5 \times 8 = 40$ marks)

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

Each answer should not exceed 600 words.

16. (a) In the following :

(i) What is the binary equivalent of decimal 363?

(ii) Convert octal to binary 34.562.

Or

(b) Explain about Excess-3 Code and Gray Codes.

17. (a) Write a note on Pairs, Quads and Octets.

Or

(b) Write any four laws of Boolean Algebra and construct the truth table.

18. (a) Discuss about the JK master slave flip-flop.

Or

(b) Explain the operation of Edge-Triggered D-flip flop.

19. (a) Discuss on seven segment decoder.

Or

(b) Explain in brief on the working principles of multiplexer.

20. (a) Write about Serial in Serial out register.

Or

(b) Write about parallel in parallel out register.

(6 pages)

Reg. No. :

**Code No. : 20621 E Sub. Code : SACS 31/
SASE 31**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2021.

Third Semester

Computer Science/Software Engineering — Allied

WEB TECHNOLOGY

(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. Web is made up of documents created with a language called _____.
(a) HTTP (b) HTML
(c) HTTL (d) HTRL

2. An international hypertext system that links together millions of documents
(a) WWW (b) HTML
(c) HTTP (d) SMTP

3. _____ provides datagram-oriented communication.
- (a) HTTP (b) FTP
(c) TCP (d) UDP
4. Which operator to be used to connect two strings in Javascript?
- (a) and (b) &
(c) + (d) .
5. Which of the following function of string object causes a string to be displayed in the specified color as if it were in a < font color = 'color' > tag?
- (a) fixed () (b) font color ()
(c) blink () (d) bold ()
6. HTML is considered as _____ language.
- (a) Programming language
(b) Higher level language
(c) OOPS language
(d) Markup language

7. How can you make a list that lists the items with numbers?
- (a) `< ul >` (b) `< list >`
(c) `< ol >` (d) `< dl >`
8. Which of these tags are all `< table >` tags?
- (a) `< table >` `< head >` `< tfoot >`
(b) `< table >` `< tr >` `< td >`
(c) `< table >` `< tr >` `< tt >`
(d) `< thead >` `< body >` `< tr >`
9. Styles for organizing the layout of an HTML document
- (a) DOM (b) CSS
(c) HTTL (d) UDP
10. If we want define style for an unique element, then which CSS selector will we use?
- (a) Class (b) Name
(c) Id (d) Text

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Describe Internet accessibility.

Or

- (b) Define the term protocol. What are their types?

12. (a) Explain frames with suitable example.

Or

- (b) Discuss the while and do-while looping statements in Javascript with example.

13. (a) Explain functions in Javascript.

Or

- (b) With suitable example explain <head> section in HTML.

14. (a) Write a note on style sheets.

Or

- (b) Explain the various methods of date object in Javascript.

15. (a) Write a Javascript program / coding that reads five integers and determines the largest and the smallest integers in the group.

Or

- (b) Discuss on Pseudo classes and Pseudo-elements.

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 Transmission Control Protocols and User Datagram Protocols.

Or

- (b) Briefly explain on Host names.

17. (a) Explain hyperlinks in detail with example.

Or

- (b) Discuss on HTML forms.

18. (a) Discuss the various operators in Javascript.

Or

- (b) Explain in detail the looping statements in Javascript.

19. (a) Discuss the Document Object and Window Object on Javascript.

Or

(b) Explain form object, select object in Javascript.

20. (a) Briefly discuss on CSS.

Or

(b) Discuss class as selector, ID as selector and contextual selectors.

(6 Pages)

Reg. No. :

**Code No. : 20622 E Sub. Code : SACS 41/
SASE 41**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2021.

Fourth Semester

Computer Science/Software Engineering — Allied

E-COMMERCE

(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. _____ is a concept to big bit with farmers.
 - (a) echoupal
 - (b) efarmer
 - (c) eAgri
 - (d) All

2. Which of the following describes e-commerce?
- (a) doing business electronically
 - (b) normal business
 - (c) sale of goods
 - (d) all
3. The _____ spells out how a company makes money by specifying where it is positioned in the value chain.
- (a) Business frame (b) Business Model
 - (c) Logic (d) All
4. The consumers fix price on their own, which businesses accept or decline
- (a) C2B (b) C2C
 - (c) B2B (d) B2C
5. _____ are the extra-long skinny ads running down the right or left side of a website.
- (a) Banners (b) Skyscrapers
 - (c) Banner swapping (d) Mail

6. _____ the following company “Pay” customer to view advertisements.
- (a) Cyber gold (b) Amazon
(c) Flipkart (d) Zomato
7. _____ is Internet Jargon for advertising supported software.
- (a) Adware (b) Spyware
(c) Worm (d) All
8. _____ is the Internet Privacy Enhanced Mail Standard.
- (a) PGM (b) PEM
(c) PPS (d) All
9. _____ is the world’s largest credit card company.
- (a) Mondex (b) Visa International
(c) Credit (d) All
10. _____ cheques use Electronic Processing.
- (a) MICR (b) Cross
(c) Any cheque (d) Electronics

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 Irregularities of the existing supply chain.

Or

- (b) Explain about the e-procurement model.

12. (a) Explain the representation of Electronic Market.

Or

- (b) Explain the impact of web on Electronic Auctions.

13. (a) Describe the E-Marketing value chain.

Or

- (b) Explain the Traditional Marketing in detail.

14. (a) Information System Security — Explain.

Or

- (b) Explain how the sites are hacked.

15. (a) Describe about Automated Teller Machine (ATM).

Or

- (b) Explain about credit card as a e-payment system.

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 advantages and disadvantages of E-Commerce.

Or

- (b) Describe the BAM model in detail.

17. (a) Explain the E-Business Transaction Models.

Or

- (b) Write the features of Face book.

18. (a) Explain the browsing behaviour model of an on-line video store.

Or

- (b) Explain about E-Branding.

19. (a) Explain about E-mail and Security.

Or

(b) Explain the E-business risk management issues.

20. (a) Explain the main concerns of Internet Banking.

Or

(b) Explain about Digital Signature.

(6 Pages)

Reg. No. :

Code No. : 6104

Sub. Code : PCSE 31

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2021

Third Semester

Computer Science - Elective

PRINCIPLES OF COMPILER DESIGN

(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 answers :

1. This analysis produce output as a sequence of token
 - (a) Lexical analysis
 - (b) Syntax analysis
 - (c) Code optimization
 - (d) Code generation

2. Output of a parser is —————
 - (a) Parse tree
 - (b) Strings of token
 - (c) Frame
 - (d) Grammar

3. Syntax analysis also known as
 - (a) Hierarchical analysis
 - (b) Hierarchical parser
 - (c) Hierarchical analysis and parsing
 - (d) None

4. A bottom up parser generates
 - (a) right most derivation
 - (b) right most derivation in reverse
 - (c) left most derivation
 - (d) left most derivation in reverse

5. Intermediate representations are
 - (a) syntax tree and postfix
 - (b) parse tree and postfix
 - (c) syntax tree and grammar
 - (d) all the above

6. Type checking is normally done during
 - (a) lexical analysis
 - (b) syntax analysis
 - (c) syntax directed translation
 - (d) code optimization

7. A variable x is never subsequently used. This statement may be removed without changing the value of the basic block
- (a) Common sub expression
 - (b) Dead code elimination
 - (c) Renaming of temporary variable
 - (d) All the above
8. The output of the code generator is
- (a) Source program (b) Object program
 - (c) Target program (d) Symbol table
9. _____ is the process of recognizing and evaluating constant expressions at compile time.
- (a) Variable (b) Constant
 - (c) Constant folding (d) Literal
10. All optimization depends on
- (a) Loops in flow graph
 - (b) Data flow analysis
 - (c) Control flow
 - (d) Optimization technique

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 ambiguity? Explain with example.

Or

- (b) Explain regular expression with example.

12. (a) Explain parse tree and its derivations.

Or

- (b) Write the differences between the regular expression and context-free grammar.

13. (a) Explain the implementation of three address statement.

Or

- (b) Explain back patching.

14. (a) Explain basic blocks with neat diagram.

Or

- (b) Explain unreachable code and redundant load and store.

15. (a) Explain semantic-preserving transformation with example.

Or

- (b) Explain loop – invariant expression and partially redundant expression.

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 phases of compiler with neat diagram.

Or

- (b) Explain parsing with example.

17. (a) Explain operator – precedence parsing with example.

Or

- (b) Explain LR parser.

18. (a) Explain assignment statement.

Or

- (b) Translate the arithmetic expression $a * -(b+c)$ into

- (i) a syntax tree
- (ii) post fix notation
- (iii) three address instruction.

19. (a) What are the issues in the design of code generator?

Or

(b) Explain code generation algorithm.

20. (a) Explain (i) global common sub-expression
(ii) copy propagation.

Or

(b) Explain speed of convergence of iterative data flow algorithm.

(6 Pages)

Reg. No. :

Code No. : 6397

Sub. Code : PCSE 32

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2021

Third Semester

Computer Science

Elective — BIG DATA ANALYTICS

(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 answers :

1. Which of the following describe Hadoop Except
 - (a) Opensource
 - (b) Realtime
 - (c) Javabase
 - (d) Distributed

2. _____ has the world's largest hadoop cluster.
 - (a) Apple
 - (b) Datamatics
 - (c) Facebook
 - (d) None

3. Facebook tackles big data _____ based on Hadoop.
- (a) Prism (b) Project big
(c) Project data (d) Project prism
4. Which of the following is a web search software
- (a) Imphala (b) Nutch
(c) Oozie (d) Manmagg
5. An open application programming interface for common cloud application services are
- (a) Bigred (b) Nurem
(c) Oozie (d) All the above
6. _____ is Odata implementation in Java.
- (a) Bigred (b) Nurem
(c) Olingo (d) Onami
7. _____ is an open source SQL query engine for apache Hbase.
- (a) Pig (b) Phoneix
(c) Pivot (d) None

8. Sqoop is an open source tool written at
(a) Cloudera (b) IBM
(c) Microsoft (d) All the above
9. _____ is used to decouple growing storage capacity.
(a) Datanode (b) Archival
(c) Policy (d) None
10. _____ is added for supporting write single replica files in memory.
(a) ROM-Disk (b) ARCHIVE
(c) RAM-DISK (d) All 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) What are the recent trends in technology of big data?

Or

- (b) Describe graph schemas in brief.

12. (a) Describe about the master dataset with examples.

Or

- (b) Implement the working principle of file system in big data.

13. (a) Write Map reduce code for counting occurrences of specific words in input text file(s).

Or

- (b) Describe pipe concept with neat diagram.

14. (a) Explain the performance metrics in big data.

Or

- (b) Describe normalization in serving layer.

15. (a) What are the challenges of incremental computation?

Or

- (b) Explain speed layer in brief.

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 characteristics and structure of big data in detail.

Or

- (b) Describe the fact based model to represent big data.

17. (a) Describe vertical partitioning in brief.

Or

- (b) Explain low level nature of distributed file systems with example.

18. (a) Explain Hadoop architecture with its components in neat diagram.

Or

- (b) Describe recomputation algorithm in brief.

19. (a) What are the requirements needed to have a best serving layer database?

Or

- (b) Explain basics of elephant DB with example.

20. (a) Describe queuing and stream processing with example.

Or

(b) Illustrate query layer with example.

(6 Pages)

Reg. No. :

Code No. : 6398

Sub. Code : PCSE 33

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2021

Third Semester

Computer Science

Elective — MOBILE COMPUTING

(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 answers :

1. A computing environment of physical mobility is defined as _____
 - (a) Mobile computing
 - (b) Virtual computing
 - (c) Soft computing
 - (d) All of the above

2. A lightweight protocol to perform trans coding on HTTP message are known as
- (a) Web services
 - (b) Internet content adaptation protocol
 - (c) Transmission control protocol
 - (d) File transfer protocol
3. A new header encapsulates the original packet, causing the mobile node's home address to have no impact on the encapsulated packet's routing is called _____
- (a) User datagram protocol
 - (b) Tunneling
 - (c) Foreign agent
 - (d) Routing cache
4. _____ maintains mappings for stationary and idle hosts.
- (a) Paging cache
 - (b) Message signal unit
 - (c) Paging update packets
 - (d) None of the above

5. A security protocol based upon the transport layer security protocol is _____
 - (a) Wireless data protocol
 - (b) WAP gateway
 - (c) Wireless transaction protocol
 - (d) Wireless transport layer security

6. The delivery of subscription-based services is intended by _____
 - (a) Combined delivery
 - (b) Separate delivery
 - (c) Forward-lock
 - (d) Virtual private network

7. The _____ provides on-premises control of the routing information requested by switches for translation of 800 type dialing.
 - (a) Customer routing point
 - (b) Service control point
 - (c) Service switching point
 - (d) Signaling transfer point

8. The network name which identifies the area covered by an access point is
 - (a) MAC address access control
 - (b) Wired equivalent privacy
 - (c) Service set identifier
 - (d) MANET

9. The range of possible values of a key in a cryptographic key is called as
(a) Cryptanalysis (b) Keyspace
(c) Integrity (d) None of the above
10. The _____ algorithm does various computations and various transformations on the input plaintext.
(a) Encryption (b) Decryption
(c) Key distribution (d) Public key

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Discuss about the applications of mobile computing.

Or

- (b) Explain transaction processing middleware in detail with diagram.

12. (a) What are the application models of Bluetooth? Explain.

Or

- (b) Describe the tunneling operations in mobile IP.

Page 4 **Code No. : 6398**

[P.T.O]

13. (a) Explain the architecture of GPRS network in detail.

Or

- (b) Write a note on WML – Wireless Markup Language.

14. (a) Discuss about customer routing point in detail.

Or

- (b) Give a brief note on softswitch.

15. (a) Write the applications for Symbian.

Or

- (b) What are the different types of attacks in static asset and dynamic asset? Explain.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Briefly discuss about :
- (i) Wireline network
 - (ii) Wireless network
 - (iii) Adhoc network.

Or

- (b) Explain with diagram three tier architecture for mobile computing.

17. (a) Discuss in detail architecture of GSM with a neat diagram.

Or

- (b) Explain the functional areas of radio frequency identification (RFID) in detail.

18. (a) Write a note on the data services provided in GPRS.

Or

- (b) Explain with diagram the WAP layered architecture and protocol stack in detail.

19. (a) Explain the types of wireless LAN.

Or

- (b) With a neat diagram explain the IN framework – In Conceptual Model (INCM).

20. (a) What are the components of a information security? Explain.

Or

- (b) Explain the palm OS architecture in detail with diagram.

(6 pages)

Reg. No. :

Code No. : 6388

**Sub. Code : PCSM 13/
ZCSM 13**

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2021

First Semester

Computer Science — Core

MATHEMATICAL FOUNDATION FOR COMPUTER
SCIENCE

(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. When is the conjunction of P and Q true?
 - (a) Both P and Q are false
 - (b) P is true, Q is false
 - (c) P is false, Q is true
 - (d) Both P and Q are True

2. Which of the following is equivalent to $\neg(P \wedge Q)$?
- (a) $\neg\neg(P \wedge Q)$ (b) $\neg(P \vee Q)$
(c) $\neg P \vee \neg Q$ (d) $\neg P \wedge \neg Q$
3. When are two sets A and B disjoint?
- (a) $A \cap B = \phi$ (b) $A \subset B$
(c) $A \cap B \neq \phi$ (d) $A \subseteq B$
4. What is $A \cup (A \cap B)$?
- (a) A (b) $A \cap B$
(c) B (d) $A \cup B$
5. If A is a null matrix, then what is p(A)?
- (a) 1 (b) 0
(c) ∞ (d) not defined
6. For a system of non-homogeneous linear equations $Ax = B$, if $\text{Rank}(A) \neq \text{Rank}(A, B)$ then the system has _____ Solution.
- (a) unique (b) infinite
(c) finite (d) no
7. For n people, where n is odd, the number of possible seating arrangement is _____.
- (a) $\frac{n}{2}$ (b) $\frac{n-1}{2}$
(c) $\frac{n-2}{2}$ (d) $\frac{n+1}{2}$

8. A closed walk in which no vertex (except the initial and the final vertex) appears more than once is called _____.
- (a) loop (b) ring
(c) circuit (d) path
9. The number of vertices in a binary tree is always _____
- (a) prime (b) composite
(c) even (d) odd
10. The row with all zeros in an incidence matrix represents _____ Vertex.
- (a) isolated (b) isomorphic
(c) connected (d) Euler

PART B — (5 × 5 = 25 marks)

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

11. (a) Show that $(x)(H(x) \rightarrow M(x)) \wedge H(s) \Rightarrow M(s)$.

Or

- (b) Show that $S \vee R$ is tautologically implied by $(P \vee Q) \wedge (P \rightarrow R) \wedge (Q \rightarrow R)$.

12. (a) Show that for any two sets $A - (A \cap B) = A - B$.

Or

- (b) Let $X = \{1, 2, 3, 4\}$ and $R = \{(1,1), (1,4), (4,1), (4,4), (2,2), (2,3), (3,2), (3,3)\}$. Write the matrix of R and sketch its graph.

13. (a) Find the rank of the matrix $\begin{pmatrix} 2 & 1 & 3 \\ 1 & 0 & 2 \end{pmatrix}$.

Or

- (b) Find the Eigen values of A^5 when $A = \begin{bmatrix} 3 & 0 & 0 \\ 5 & 4 & 0 \\ 3 & 6 & 1 \end{bmatrix}$.

14. (a) Prove that the number of vertices of odd degree in a graph is always even.

Or

- (b) Write a note on Travelling Salesman problem.

15. (a) Mention any five properties of trees.

Or

- (b) Compare Kruskal and Prim's algorithms.

[P.T.O.]

PART C — (5 × 8 = 40 marks)

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

16. (a) Show that $(\forall x)(P(x) \vee Q(x)) \Rightarrow (\forall x)P(x) \vee (\exists x)Q(x)$ by indirect method.

Or

- (b) Obtain the principle disjunctive normal form.

(i) $\neg P \vee Q$

(ii) $(P \wedge Q) \vee (\neg P \wedge R) \vee (Q \wedge R)$

17. (a) Show that $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$ using Venn diagram.

Or

- (b) Draw the flowchart for factorial function.

18. (a) Show that the equations $x + y + z = 6$, $x + 2y - 2z = -3$, $2x + 3y + z = 11$ are consistent and solve.

Or

- (b) Find the Eigen value and Eigen vectors of

the matrix $A = \begin{bmatrix} 8 & -6 & 2 \\ -6 & 7 & -4 \\ 2 & -4 & 3 \end{bmatrix}$.

19. (a) Explain any two applications of graph.

Or

- (b) What are the different operations on graph?

20. (a) Draw all the trees of four labelled vertices.

Or

- (b) What is an adjacency matrix? Explain.
-

(6 pages)

Reg. No. :

Code No.: 6390

**Sub. Code: PCSM 15/
ZCSM 15**

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2021

First Semester

Computer Science - Core

DISTRIBUTED COMPUTING / DISTRIBUTED
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. The loosely coupled systems are referred to as _____
 - (a) serial processing systems
 - (b) parallel processing systems
 - (c) data processing system
 - (d) distributed computing systems

2. LAN Stands for _____
- (a) Local Area Network
 - (b) Limited Area Network
 - (c) Large Area Network
 - (d) Local Aided Network
3. The process of reconstruction of program objects from message data on the receiver side is known as _____
- (a) decoding (b) encode
 - (c) buffer (d) translate
4. Which of the following two operations are provided by the Inter Process Communication facility?
- (a) write and delete message
 - (b) delete and receive message
 - (c) send and delete message
 - (d) receive and send message
5. PRC stands for _____
- (a) Remote Procedure Calls
 - (b) Remote Process Calls
 - (c) Remote Procedure Cells
 - (d) Remote procedure Count

6. In a DSM system, data blocks migrate between nodes on demand in known as _____
- (a) Data location and access
 - (b) Replacement strategy
 - (c) Thrashing
 - (d) Heterogeneity
7. Which one of the following condition are processes are allowed to request for new resources without releasing the resources that they are currently holding?
- (a) Mutual-exclusion (b) Hold-and-wait
 - (c) No-preemption (d) Circular-Wait
8. _____ is the relocation of a process from its current location to another node
- (a) Threads (b) Process
 - (c) Process migration (d) Processor Allocation
9. The _____ model processing of the client's request is performed at the server's node.
- (a) Remote service model
 - (b) Data-drive model
 - (c) Data-caching model
 - (d) Remote service model

10. A _____ is a file that has multiple copies, with each copy located on a separate file server.
- (a) remote file (b) cached file
(c) data drive model (d) replicated file

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 distributed computing system models with example.

Or

- (b) Describe the components of distributed computing environment with example.

12. (a) Enumerate the concept of synchronization in message passing.

Or

- (b) Discuss the handling failures in interprocess communication.

13. (a) Explain the design and implementation issues of distributed shared memory.

Or

- (b) Explain the structure of shared memory with example.

14. (a) Discuss the clock synchronization with example.

Or

- (b) Discuss the conditions for deadlock with example

15. (a) Explain the features of distributed file system with example.

Or

- (b) Describe about the properties of atomic transaction with example.

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 types of network with example.

Or

- (b) Explain the basic concepts of ATM technology with example.

17. (a) Enumerate the various types of message passing techniques.

Or

- (b) Explain the various buffering strategies in inter process communications.

18. (a) Illustrate the PRC Model with neat diagram.

Or

(b) Explain the Architecture of distributed shared memory with neat diagram.

19. (a) Discuss the deadlock avoidance with example.

Or

(b) Demonstrate the process migration with neat diagram.

20. (a) Explain the File-Accessing Models with example.

Or

(b) Discuss the fault tolerance in distributed file systems with example.

(6 Pages)

Reg. No. :

Code No. : 6101

Sub. Code : PCSM 31

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2021

Third Semester

COMPUTER SCIENCE - CORE

DIGITAL IMAGE PROCESSING

(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 answers :

1. The size of the image is extended by mirror reflecting it across its border with the _____ method.
(a) replicate (b) circular
(c) symmetric (d) gmean

2. Function _____ is the basic image processing toolbox function for intensity transformation of gray-scale images.
- (a) imadjust (b) stretchlim
(c) intrans (d) none of the above
3. When an offset is combined with multiplying the filter by a constant greater than 1, the approach is called
- (a) High pass sharpening
(b) High-frequency emphasis filtering
(c) Low pass smoothing
(d) Surface plotting
4. Expand PSF
- (a) Point Spread Function
(b) Point Split Function
(c) Point Segment Function
(d) None of the above
5. Images can be blurred using
- (a) Contouring (b) Low pass filter
(c) Erosion (d) High pass filter

6. A class of transformations that differ in the transformation kernels employed, the fundamental nature of those functions and in the way they are applied are known as _____
- (a) Discrete wavelet transform
 - (b) Scalability
 - (c) Translatability
 - (d) Compression
7. Reduction of binary objects or shapes in an image to strokes whose width is one pixel is called
- (a) Thinning
 - (b) Pruning
 - (c) Motion compensation
 - (d) Skeletonization
8. _____ is an operation which grow or thickens objects in an image.
- (a) Erosion
 - (b) Compression
 - (c) Dilation
 - (d) Mapping
9. A scalar, the maximum distance between any two pixels in the boundary of a region is
- (a) Major Axis
 - (b) Minor Axis
 - (c) Basic rectangle
 - (d) Diameter

10. Both internal and external markers are used to modify the gradient image using a procedure called
- (a) signatures
 - (b) minima imposition
 - (c) watershed transform
 - (d) zero crossings detectors

PART B — (5 × 5 = 25 marks)

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

11. (a) Explain how digital image is represented.

Or

- (b) List the spatial filters support functions in image processing toolbox standard spatial filters.

12. (a) Write a note on 2-D discrete Fourier transform.

Or

- (b) Explain direct inverse filtering.

13. (a) Discuss about indexed images in MATLAB.

Or

- (b) Give a brief account on Basics of color image processing.

14. (a) Explain dialation and erosion.

Or

(b) Write down the five basic steps in Huffman decoding process.

15. (a) Write a note on point detection in image segmentation.

Or

(b) Explain simple boundary descriptors.

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 usage of imadjust and stretchlim in intensity transformation.

Or

(b) Discuss about non linear spatial filtering in detail.

17. (a) Explain high pass frequency domain filters.

Or

(b) Explain image restoration process.

18. (a) Discuss about color transformation in detail.

Or

(b) What is the purpose of NTSC color space?
Explain in detail.

19. (a) With a neat diagram explain JPEG compression.

Or

(b) Explain gray scale morphology.

20. (a) Write a brief note on basic global thresholding.

Or

(b) Explain the usage of chain codes in detail.

(6 Pages)

Reg. No. :

Code No. : 6395

Sub. Code : PCSM 32

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2021

Third Semester

COMPUTER SCIENCE — CORE

SOFT COMPUTING

(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 answers :

1. Which controls the amount of weight adjustment at each step of training
 - (a) Bias
 - (b) Threshold
 - (c) Learning rate
 - (d) Vigilance parameter

2. If $f(x)$ is defined as $f(x) = \begin{cases} 1 & \text{if } x > \theta \\ x & \text{if } 0 \leq x \leq 1 \\ 0 & \text{if } x < \theta \end{cases}$, then it is
- (a) Binary step function
 - (b) Bipolar step function
 - (c) Linear function
 - (d) Ramp function
3. The three states of each unit in F2 layer in ART network are
- (a) Active, inactive, inhibited
 - (b) Active inactive, prohibited
 - (c) Active, control, inhibited
 - (d) Active, dead, prohibited
4. The Adaline network is trained using _____
- (a) Hebb rule
 - (b) Linear rule
 - (c) Gradient rule
 - (d) Delta rule
5. _____ is the process of transforming a crisp set to fuzzy set.
- (a) Intuition
 - (b) Rank ordering
 - (c) Fuzzification
 - (d) Defuzzification

6. Which one is not a fuzzy set operation?
(a) Union (b) Involution
(c) Intersection (d) Complement
7. _____ is a composition operation.
(a) Max_Product (b) Max_add
(c) Min_product (d) Min_add
8. An interval closed at left end and opened at right end is represented as
(a) $[a_1, a_2] = \{x \mid a_1 \leq x \leq a_2\}$
(b) $[a_1, a_2) = \{x \mid a_1 \leq x < a_2\}$
(c) $(a_1, a_2] = \{x \mid a_1 < x \leq a_2\}$
(d) $(a_1, a_2) = \{x \mid a_1 < x < a_2\}$
9. The set of all possible alleles present in a particular form is a _____
(a) alleles (b) genome
(c) genepool (d) locus
10. Proportionate based selection selects individuals based on their _____
(a) Population size (b) Fitness value
(c) Rank (d) Alleles

PART B — (5 × 5 = 25 marks)

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

11. (a) Explain training algorithm of hebb network.

Or

(b) Discuss any five activation functions.

12 (a) Explain how to train pattern association with
hebb rule.

Or

(b) Write a short note on Hamming network.

13. (a) State and explain properties of fuzzy sets.

Or

(b) Briefly explain any five defuzzification
methods.

14. (a) Explain the various mathematical operations
performed on intervals.

Or

(b) Write the steps in multiobjective decision
making.

15. (a) Write short notes on selection operation.

Or

- (b) How the behaviour of GA is formulated with schema theorem?

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 basic types of neuron connection architecture? Explain in detail.

Or

- (b) Give training and testing algorithm for back propagation network.

17. (a) Give an account on discrete hopfield network.

Or

- (b) With neat architecture explain training algorithm of ART network.

18. (a) State and explain the operations and properties of classical relation.

Or

- (b) Discuss Lambda cuts for fuzzy sets and fuzzy relations.

19. (a) Explain the methods of fuzzy inference systems.

Or

(b) Explain the architecture and operations of fuzzy logic control system.

20. (a) Give an account on crossover and mutation operations.

Or

(b) Explain adaptive genetic algorithms in detail.

(6 Pages)

Reg. No. :

Code No. : 6103

Sub. Code : PCSM 33

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2021

Third Semester

COMPUTER SCIENCE - CORE

SOFTWARE TESTING

(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 answers :

1. Code fulfils its purpose without waste of resource is referred as
 - (a) reliability
 - (b) efficiency
 - (c) usability
 - (d) testability

2. Which is used for managing software products from initial stage to final retirement of product?
 - (a) software console management
 - (b) software contract management
 - (c) software control management
 - (d) software configuration management

3. Programmers make mistakes during coding. These mistakes are known as
 - (a) Failures
 - (b) Defects
 - (c) Bugs
 - (d) Errors

4. Integration testing techniques are
 - (a) Top down
 - (b) Bottom up
 - (c) Sandwich
 - (d) All of the above

5. In which of the following situations regression testing is not performed?
 - (a) When project manager asks to perform
 - (b) When new functionality is introduced
 - (c) When database system is changed
 - (d) When system is installed on different hardware configuration

6. Which of the following is a form of functional testing?
- (a) Security level testing
 - (b) Boundary value analysis
 - (c) Performance testing
 - (d) Usability testing
7. UML stands for
- (a) Unified modeling language
 - (b) Universal modeling language
 - (c) Uniform modeling language
 - (d) None of the above
8. Agile is a —————
- (a) Sequential
 - (b) Iterative
 - (c) Incremental
 - (d) Both (b) and (c)
9. Which of the following is not a type of histogram?
- (a) Isolated peak
 - (b) Comb
 - (c) Truncated
 - (d) Pie chart

10. Pareto diagrams are a main part of _____ steps.
- (a) Measure and analyze
 - (b) Define and measure
 - (c) Define and improve
 - (d) Analyze and control

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Discuss about boehm model.

Or

- (b) Write in detail about process framework.

12. (a) What is the purpose of testing? Discuss.

Or

- (b) Discuss about data flow testing.

13. (a) Write a note on acceptance testing.

Or

- (b) Explain use case based testing.

14. (a) Write in detail about agile testing.

Or

(b) Discuss about basics of object oriented systems.

15. (a) Narrate the merits and demerits of automation testing.

Or

(b) Explain the usage of check sheet in quality improvement.

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 importance of inspections and walkthrough in software quality assurance.

Or

(b) Discuss about software configuration management.

17. (a) Describe all methods of integration testing.

Or

(b) How to handle defects in testing process? Explain.

18. (a) Explain in detail about regression testing.

Or

(b) Discuss decision table in logic based testing.

19. (a) Explain the role of TaaS in cloud computing.

Or

(b) Describe the activities involved in test management.

20. (a) Discuss about the software metrics categories.

Or

(b) What is cause and effect diagram? Explain.

(6 Pages)

Reg. No. :

Code No. : 6396

Sub. Code : PCSM 34

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2021

Third Semester

Computer Science — Core

RESEARCH METHODOLOGY

(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 answers :

1. Research is
 - (a) Searching again and again
 - (b) Finding solution to any problem
 - (c) Working in a scientific way to search for truth of any problem
 - (d) Collecting data and analyze

2. The research carried over several time periods is _____
- (a) Conceptual research
 - (b) Empirical research
 - (c) Longitudinal research
 - (d) Historical research
3. In the process of conducting research “Formulation of hypothesis” is followed by
- (a) Selection of research tools
 - (b) Statement of objectives
 - (c) Analysis of data
 - (d) Collection of data
4. The maintext of the report consists of
- (a) Abstract, findings, summary, conclusion
 - (b) Introduction, methodology, main report, conclusion
 - (c) Introduction, findings, summary, conclusion
 - (d) Introduction, findings, main report, conclusion
5. Interview is a
- (a) Research method
 - (b) Measurement technique
 - (c) Tool for data collection
 - (d) Data analysis technique

6. Which one is a formal experimental design?
(a) Control design (b) Randomized design
(c) Functional design (d) Factorial design
7. Analysis of variance is a statistical method of comparing the _____ of several populations.
(a) Standard deviations
(b) Variances
(c) Means
(d) Proportions
8. _____ is the data, which have already been collected and analysed by someone else.
(a) Primary data (b) Secondary data
(c) Information (d) Treatment
9. _____ refers to the task of drawing inferences from the collected facts after an analytical study.
(a) Interpretation (b) Classification
(c) Tabulation (d) Adjusting data
10. Which one is used to emphasize relative proportion or share of each category?
(a) bar chart (b) multiple bars
(c) line chart (d) pie chart

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 research? Write the objectives of research.

Or

- (b) Write down the criteria of good research.

12. (a) Explain the concept behind probability sampling.

Or

- (b) Write the basic principles of experimental designs.

13. (a) Explain the possible sources of error in measurements.

Or

- (b) What are secondary data? State their characteristics.

14. (a) Explain the various types of analysis.

Or

- (b) Write the steps for one observation per cell in two way ANOVA.

15. (a) What are the steps in development of algorithm?

Or

- (b) List the steps involved in writing report.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Describe the techniques involved defining a problem.

Or

- (b) Give an account on research process.

17. (a) Give an account on various research designs.

Or

- (b) What is a sample design? Explain the main steps of sample design.

18. (a) Explain the desirable qualities to judge the goodness of measurement scales.

Or

- (b) Discuss how data collection is performed with questionnaire.

19. (a) Discuss data preparation process in detail.

Or

(b) Explain the steps involved in one-way ANOVA.

20. (a) Explain the types of reports.

Or

(b) Describe the layout of research report in detail.

Reg. No. :

(6 pages)

Code No.: 6540

Sub. Code: ZCSM 11

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2021

First Semester

Computer Science - Core

DESIGN AND ANALYSIS OF ALGORITHM

(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 a finite set of instruction that, it followed, accomplishes a particular task.
(a) Input (b) Output
(c) Algorithm (d) Finiteness

2. The number of subtrees of a node is called _____
(a) Root (b) Degree
(c) Terminals (d) Nonterminals

3. The Circular nodes in binary search are called
- (a) Internal nodes (b) External nodes
(c) Path (d) Siblings
4. In Binary Search the average time required
- (a) $O(\log n)$ (b) $\log n$
(c) $O(n)$ (d) $O(n^2)$
5. _____ is known as greedy algorithm, because it choose at each step the cheapest edge to add to subgraph S.
- (a) Kruskal's algorithm
(b) Prim's algorithm
(c) Bellman ford algorithm
(d) Dijkstra algorithm
6. What is the number of edges present in a complete graph having n vertices?
- (a) $(n*(n+1))/2$
(b) $(n*(n-1))/2$
(c) n
(d) Information given is insufficient

7. Two main measures for the efficiency of an algorithm are _____
- (a) Processor and memory
 - (b) Time and Space
 - (c) Complexity and Capability
 - (d) Data and Space
8. Heap is defined to be a _____
- (a) Complete binary tree
 - (b) binary tree
 - (c) tree structure
 - (d) None
9. Cook Satisfiability is in P if and only if _____
- (a) $P=NP$
 - (b) $P=N$
 - (c) $P= N_2$
 - (d) None of the mentioned
10. The time required for nondeterministic algorithm is _____
- (a) $O(1)$
 - (b) $O(n \log n)$
 - (c) $O(n)$
 - (d) $O(\log n)$

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 Pseudo code Conventions?

Or

- (b) Illustrate Stacks with an algorithm?

12. (a) Examine the concept of General Methods in Divide- and-Conquer?

Or

- (b) Discuss about Randomized Sorting Algorithms.

13. (a) Give an account of Knapsack Problem.

Or

- (b) Determine about Prim's Algorithm.

14. (a) How to construct the Breadth First Search and Traversal?

Or

- (b) Discuss about Graph Coloring.

15. (a) Write short notes on FIFO Branch-and-Bound.

Or

- (b) Explain the concept of Nondeterministic Algorithms.

PART C — (5 × 8 = 40 marks)

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

16. (a) Write a brief notes on Algorithm Specification.

Or

- (b) Explain the concept of Trees?

17. (a) Elaborate Binary Search with its Algorithm?

Or

- (b) Explain in detail about Strassen's Matrix Multiplication?

18. (a) Explain the concept of Job scheduling with deadlines.

Or

- (b) Explain in detail about Single Source Shortest Path.

19. (a) Categorize the various Techniques used in Binary Trees.

Or

(b) Write a brief notes on Connected Components and Spanning Trees.

20. (a) Summarize the concept of Job Shop Scheduling?

Or

(b) Discuss in detailed about Cook's Theorem?

(6 pages)

Reg. No. :

Code No. : 6541

Sub. Code : ZCSM 12

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2021

First Semester

Computer Science – Core

ADVANCED 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. The background and foreground colors of an applet can be set using the values defined in _____ class.
 - (a) Color
 - (b) Back color
 - (c) For color
 - (d) All of these

2. A _____class implements all methods of an interface with a do-nothing code.
- (a) WindowEvent (b) mouse event
(c) ComponentEvent (d) adapter
3. The Swing classes are contained in a Java extension package called _____
- (a) javax.swing (b) java.swing
(c) javax.awt (d) javac.swing
4. _____ provides methods to display a card of the user's choice.
- (a) JMenu (b) JDialog
(c) JRadioButton (d) CardLayout
5. URL is an acronym for _____
- (a) Uniform Resource Locator
(b) Under Resource Locator
(c) Uniform Resource Location
(d) Uniform Restore Locator
6. The text typed is packed in a datagram and sent to a client in the local host with port number _____
- (a) 3456 (b) 3457
(c) 3476 (d) 3567

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) List out the different multimedia methods defined in applet give an example.

Or

- (b) Write an applet program that will accept a text from a keyboard and display it on the screen as a moving text from right to left. Use key event to input the text.

12. (a) How to create the windows in Swing? Give an example.

Or

- (b) Mention the different types of methods used in JLabel.

13. (a) How the server send the message to client explain?

Or

- (b) Discuss about UDP Server-Client Conversation.

14. (a) Write the steps for using JDBC.

Or

- (b) How to use driver manager for creating connection with database?

15. (a) Determine about HttpServlet class with an example.

Or

- (b) Write a Servlet program to receive student profile using HTML POST method.

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 HTML Applet tag with an example.

Or

- (b) Describe the following event class

(i) ComponentEvent Class

(ii) MouseEvent Class

(iii) TextEvent Class.

17. (a) How to create JMenuItem, JMenu, JMenuBar of JFrame and JApplet? Explain with example.

Or

- (b) Define LayoutManager? Explain the various types LayoutManager in detail.

18. (a) What is meant by URL? Discuss about URL Class and URL Connection.

Or

- (b) Write a server and a client (TCP/IP) program such that message typed in server is displayed on a client and vice versa.

19. (a) Write a Java program to create JDBC-ODBC connection and show how to read a database created in MS-Access.

Or

- (b) Explain about Connection Interface - Creating Statements in JDBC.

20. (a) Summarize about Session tracking and its methods identify by the client browser.

Or

- (b) Elaborate the working mechanism of Servlet with I/O files.

Reg. No. :

(6 pages)

Code No.: 6542

Sub. Code: ZCSM 14

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2021

First Semester

Computer Science - Core

COMPILER 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. Compiler should report the presence of _____ in the source program during translation process.
(a) Classes (b) Objects
(c) Errors (d) Text

2. _____ is the output of lexical analyzer?
(a) A parse tree (b) A list of tokens
(c) Intermediate code (d) None

3. How many types of parsers used for grammars?
- (a) 4 (b) 3
(c) 5 (d) 6
4. Procedure calls and returns are usually managed by a run-time stack called the _____
- (a) activation record (b) frame
(c) Calling Sequences (d) control stack
5. Static checking includes _____, which ensures that operators are applied to compatible operands.
- (a) Parser
(b) common subexpressions
(c) syntax trees
(d) type checking
6. In three-address code, how many operator on the right side of an instruction?
- (a) most one (b) most three
(c) most four (d) most two

7. The abbreviation of RISC is _____
- (a) Reduced Instruction Set Computer
 - (b) Reduced Instruction Static Computer
 - (c) Reduced Instruction Set Controller
 - (d) Reduced Information Set Computer
8. Partition a sequence of three address instruction into _____
- (a) Bits
 - (b) Bytes
 - (c) Basic blocks
 - (d) Both (a) and (b)
9. The transformation of replacing an expensive operation, such as multiplication, by a cheaper one, such as addition, is known as _____
- (a) induction variable
 - (b) relationship
 - (c) loop-invariant
 - (d) strength reduction
10. _____ for basic blocks containing several statements can be constructed by composing the functions corresponding to individual statements.
- (a) data-flow values
 - (b) Monotonicity
 - (c) Nondistributivity
 - (d) Transfer functions

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 Transition diagram?

Or

- (b) Discuss the structure of Lex program?

12. (a) Distinguish between Lexical analysis and Syntactic Analysis?

Or

- (b) How to construct LR parsing table?

13. (a) Explain the variants of Syntax tree.

Or

- (b) Describe about addressing array element?
Give an example.

14. (a) Write short notes on DAG representation of basic blocks.

Or

- (b) Write about Peephole Optimization?

15. (a) Illustrate the terms of data-flow analysis scheme?

Or

- (b) Mention the various types of redundancy?

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 structure of Compiler with neat diagram?

Or

- (b) Explain about Optimization of DFA-Based Pattern Matchers?

17. (a) Determine the working mechanism of Top-Down Parsing?

Or

- (b) Define Context-Free Grammar? Discuss the Conventional notation and derivation of Context-Free Grammar?

18. (a) Explain the working mechanism of Three-Address code?

Or

- (b) Interpret on Back patching? How to construct the Flow-of-Control Statements?

19. (a) Illustrate about the issues in the design of a code generation?

Or

- (b) Explain in detailed about basic blocks and flow graphs?

20. (a) Define Constant Propagation? Explain the various types of constant propagation?

Or

- (b) Summarize the Loops in Flow-Graphs with an example?
