Class : **II PUC**   Academic Year: **2024-25**

Subject: **Computer Science (41)**   Maximum marks : **70**

Time : **03 Hrs.**   No. of Questions: **44**

Instructions:
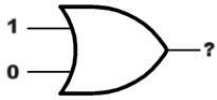
   (a) The question paper has Five parts namely A,B,C,D and E.
   (b) For Part-A questions, only the first written answers will be considered for evaluation.
   (c) For question having diagram alternate questions are given at the end of the question paper in a separate section (Part-E) for visually challenged students.

PART – A

Answer <u>ALL</u> the questions, each question carries <u>ONE</u> mark.   20 x 1 = 20

I   **Select the correct answer from the choices given.**

1. How many bits of data USB can transmit ?
    (a) 127 bits   (b) 12 megabits   (c) 16 megabits   (d) 128 bits

2. Dual of the expression X + 0 = X is
    (a) $X \cdot 1 = X$ (b) $X \cdot 0 = X$ (c) X + 1 = X   (d) X + 1 = 1

3. Given the logic diagram   the output is

    (a) 0   (b) 1, 0   (c) 1   (d) 0, 0

4. In one dimensional array if LB = 0 and UB = 10 then array size is
    (a) 9   (b) -1   (c) 12   (d) 11

5. Identify the reason for the error in the following program segment

```
class temp
{
    private : int x;
};

void main( )
{
        temp  t;
        cout<<"enter the value of X";
        cin>> t.x;
}
```

    (a) A non member function trying to access protected data member
    (b) Member function trying to access private data member
    (c) A non member function trying to access public data member
    (d) The main function trying to access private data member

6. Assertion (A) : Very efficient code can be generated using inline function.
    Reason (R) : Inline function has complex data structure.
    (a) Both A and R are false   (b) A is true and R is false
    (c) A is false and R is true   (d) Both A and R are true

7. The symbol used with destructor

    (a) .   (b)   ::   (c)   ~   (d)   *

8. The combination of any two types of inheritance is called
   (a) Single level inheritance   (b) Hybrid inheritance
   (c) Multiple inheritance   (d) Hierarchical inheritance

9. Given **int *ptr, x = 100;** which is the correct way to assign address of x variable to the pointer
   (a) ptr = x;   (b) ptr = *x   (c) ptr = &x   (d) x = ptr;

10. Which of the following is the DBMS software ?
    (a) HTML   (b)XML   (c) DHTML   (d) MySQL

11. Identify the DML command
    (a) INSERT   (b) CREATE   (c) DROP   (d) ALTER

12. Correct expansion form of IP
    (a) Intranet Protocol   (b) Internet Protocol
    (c) Interconnect Protocol   (d) Information Protocol

13. An example for Half Duplex communication mode
    (a) Walkie talkie   (b) Television   (c) Telephone   (d) Mobile

14. The nonprofit organization created for the purpose of supporting free software movement
    (a) OSI   (b) W3C   (c) FSF   (d) GNU

15. Which one of the following is not a scripting language?
    (a) Python   (b) XML Script   (c) PHP script   (d) Java Script

II   **Fill in the blanks choosing the appropriate word/words from those given in the brackets.**
     (Secondary, oval, redundancy, datamining, relational, meta data)

16. Data about data is called _____

17. Data duplication is called _____

18. _____ model organize the data in table form

19. The symbol is used to represent attribute in ER diagram is _____

20. The candidate key which is not currently selected as primary key is called _____ key

PART-B

III   **Answer any <u>FOUR</u> questions. Each question carries <u>TWO</u> marks:**   **4 x 2 =8**

21. Prove involution law

22. Realize AND using NOR gate.

23. Mention any two features of parameterized constructor.

24. Differentiate between read( ) and write( )

25. Write any two features of Database System.

26. Explain any two logical operator in SQL.

27. Write the purpose of MAX() and MIN() group functions in SQL.

PART-C

IV   **Answer any <u>FOUR</u> questions. Each question carries <u>THREE</u> marks:**   **4 x 3 = 12**

28. Write a note on Cache memory

29. What is primitive data structure? Explain any two operations on primitive data structure.

30. Define array of pointer. Give suitable example.

31. Write the purpose of seek directions in C++ data file handling

32. Differentiate between manual and electronic data processing

33. Identify the type of e-commerce in the following cases

     i. Buying of goods by the distributer from the manufacturer
     ii. Buying of goods from Amazon web site
     iii. Buying of used car from a owner

34. Write HTML code to create the following table.

Number of classes held	120
Number of classes attended	100

PART-D

V   **Answer any FOUR questions, each question carries Five marks:**   **4 x 5 = 20**

35. Write an algorithm for enqueue operation.

36. Explain the operations on stack.

37. Mention any three advantages and two disadvantages of OOP.

38. What is function overloading? Explain the need for function overloading.

39. Write the rules for constructor.

40. What is inheritance? Explain Hierarchical and Multiple inheritance

41. Explain different network topologies.

VI   Answer any __TWO__ questions, each question carries __FIVE__ marks   2 x 5 = 10

42. Given the Boolean function F(A,B,C, D) =∑(0,2,6,7,8,9,10,11,13),
    Reduce it using K-map.

43. Define a class **time** with following members and conditions
    i.   Data members : **hour, minute, seconds**
    ii.   Member functions: **getdata()** and **output()**
    iii.   Define member functions inside the class to input and output hour, minute
            and seconds.

44. Write the SQL query for the following questions based on given employee table

Empid	Name	Age	Salary
101	AAA	35	25000
102	BBB	28	18000
103	CCC	30	10000

    i)   Develop the table with above fields
    ii)   Display the structure of the table
    iii) Find total number of employees
    iv)   Find the sum of all employee's salary
    v)   Display all employee records with age>=15

PART-E

VII   (For Visually Challenged Students only)

3. What is the output of the two input NAND gate for the inputs X = 1 and Y =0?

    (a) 0   (b) 1, 0   (c) 1   (d) 1, 1

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