SUBJECT: *COMPUTER SCIENCE (41)*   **BLUE PRINT FOR MQP-1**   **CLASS : II PUC**

Question type	Number of questions	Marks
MCQ	15	15
FILL IN THE BLANKS (DATA BASE CONCEPTS) SA-1	5	5
SHORT ANSWERS SA-2	04(07)	08 (14)
SHORT ANSWER SA-3	04(07)	12 (21)
LONG ANSWERS	04(07)	20(35)
LONG ANSWER (HOTS)	02(03)	10(15)
TOTAL	34(44)	70(105)

SL. NO.	Chapter/ Content domain/ Unit/ Theme	No. of periods	Marks	Remember (37%)					Understand (29%)					Apply(16%)					HOTS (18%)				
				MCQ	SA-1	SA-2	SA-3	LA	MCQ	SA-1	SA-2	SA-3	LA	MCQ	SA-1	SA-2	SA-3	LA	MCQ	SA-1	SA-2	SA-3	LA
1	Typical configuration of Computer system	5	4	1								1											
2	Boolean algebra	10	8	1							1												1
3	Logic Gates	5	3			1													1				
4	Data structures	15	14									1	1					1	1				
5	OOP concepts	5	5										1										
6	Classes and objects	6	6																1				1
7	Function Overloading	6	6	1				1															
8	Constructors and Destructors	8	8			1		1	1														
9	Inheritance	7	6						1				1										
10	Pointers	5	4														1		1				
11	Data File handling	6	5				1				1												
12	Database concepts	12	11	1	3						2	1					1						
13	SQL commands	11	10			1			1		1												1
14	Networking Concepts	9	7	1									1	1									
15	Internet and Open source concepts	5	4	1													1						
16	Web Designing	5	4	1													1						
	TOTAL HOURS AND MARKS	120	105	7	3	6	3	20	3	2	6	9	10	1	0	2	9	5	4	0	0	0	15

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

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

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

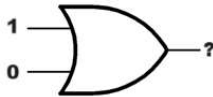---

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 <u>TWO</u> questions, each question carries <u>FIVE</u> 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

****

Question type	Number of questions	Marks
MCQ	15	15
FILL IN THE BLANKS (DATA BASE CONCEPTS) SA-1	5	5
SHORT ANSWERS SA-2	04(07)	08 (14)
SHORT ANSWER SA-3	04(07)	12 (21)
LONG ANSWERS	04(07)	20(35)
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TOTAL	34(44)	70(105)

SL. NO.	Chapter/ Content domain/ Unit/ Theme	No. of periods	Marks	Remember (36%)					Understand (29%)					Apply(16%)					HOTS (19%)				
				MCQ	SA-1	SA-2	SA-3	LA	MCQ	SA-1	SA-2	SA-3	LA	MCQ	SA-1	SA-2	SA-3	LA	MCQ	SA-1	SA-2	SA-3	LA
1	Typical configuration of Computer system	5	4	1								1											
2	Boolean algebra	10	8	1												1							1
3	Logic Gates	5	3													1			1				
4	Data structures	15	14					1				1						1	1				
5	OOP concepts	5	5					1															
6	Classes and objects	6	6																1				1
7	Function Overloading	6	6					1											1				
8	Constructors and Destructors	8	8						1		1							1					
9	Inheritance	7	6					1	1														
10	Pointers	5	4														1		1				
11	Data File handling	6	5				1				1												
12	Database concepts	12	11		3	1			1	2		1											
13	SQL commands	11	10			1			1		1												1
14	Networking Concepts	9	7	1					1				1										
15	Internet and Open source concepts	5	4	1			1																
16	Web Designing	5	4	1								1											
	TOTAL HOURS AND MARKS	120	105	5	3	4	6	20	5	2	6	12	5	0	0	4	3	10	5	0	0	0	15

GOVERNMENT OF KARNATAKA
KARNATAKA SCHOOL EXAMINATION AND ASSESSMENT BOARD
MODEL QUESTION PAPER-2

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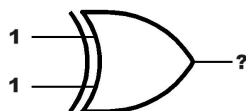
I Select the correct answer from the choices given.

1. Which one of the following transfers eight bits of data at a time?

(a) Serial port   (b) Parallel port   (c) PS/2   (d) USB

2. Idempotent law states that

(a) $X \cdot X = X$ (b) $X \cdot 0 = 0$ (c) X + 1 = 1   (d) $\bar{\bar{X}} = X$

3. Given the logic diagram the output is

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

4. Statement (A): Array is collection homogenous elements

Statement (B): Array is an example for non-linear data structure

(a) Bothe A and B are True   (b) A is False and B is True

(c) A is True and B is False   (d) Bothe A and B are False

5. Identify the syntax error in the following program segment

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

void main( )
  {
     box  b;
  }
```

(a) Error due to semicolon missing after class definition

(b) Error due to semicolon missing at the data member declaration line

(c) Error due to missing public access specifier

(d) Error due to missing protected access specifier

6. Which of the following statements are correct with respect to function overloading?
   - i)   Functions name are same
   - ii) Number of arguments are same
   - iii) Number of arguments are different
   - iv) Data types of arguments are different

   (a) i) and ii) are correct   (b) i), ii) and iii) are correct
   (c) i), iii) and iv) are correct   (d) ii) and iv) are correct

7. Which constructor does not accept any argument?
   (a) Default   (b) Parameterized   (c) Copy   (d) Overloaded

8. Another name of derived class
   (a) Main class   (b) Super class   (c) Base class   (d) Sub class

9. Which one of the following is unsupported C++ expression with respect to pointer **ptr ?**
   (a) ptr + 80   (b) ptr++   (c) ptr - 100   (d) ptr * 100;

10. Each column of a table is identified by distinct header called
    (a) Record   (b) Domain   (c) Attribute   (d) Tuple

11. Which one of the following command belongs to DQL?
    (a) SELECT   (b) CREATE   (c) DROP   (d) UPDATE

12. Correct expansion form of TCP
    (a) Transmission Control Program   (b) Transfer Control Program
    (c) Transfer Control Protocol   (d) Transmission Control Protocol

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

14. Which one of the following is not a web browser
    (a) Internet Explorer   (b) Netscape Navigator   (c) Google Chrome   (d) Telnet

15. Who invented the HTML?
    (a) Richard Stallman   (b) Tim Berners Lee   (c) Bruce Perens   (d) Erics Raymond

II   Fill in the blanks choosing the appropriate word/words from those given in the brackets.
(Diamond, Information, Oracle, Graph, Foreign, Tree)

16. Processed data is called as _____

17. _____ an example for DBMS software

18. Hierarchical data model organizes the data in _____ like structure

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

20. A _____ key is a field in the relational table, that matches the primary key column of another table

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

21. Prove algebraically that $XY + X\bar{Y} = X$

22. Realize OR gate using NOR gate.

23. What is constructor? Give an example.

24. Differentiate between put() and get() functions

25. List any two applications of Databases.

26. Explain any two arithmetic operators in SQL.

27. Compare DELETE and DROP command in SQL.

PART-C

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

28. Explain the characteristics of motherboard.

29. What is non-primitive data structure? Give any two examples.

30. What is a pointer? Explain pointer declaration with syntax and example.

31. Write the basic operations performed on binary files in C++

32. Explain three levels of data abstraction.

33. Define   i) Proprietary Software   ii) WWW   iii) e-commerce

34. Write HTML tags

    i)   To produce link from one web page to another web page

    ii) To insert image in a web page

    iii) To add background colour to webpage

PART-D

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

35. Write an algorithm to perform insertion sort method to sort elements.

36. Explain the operations performed on queue.

37. Write the applications of OOP.

38. What are the characteristics of friend function?

39. Explain destructor with syntax and example.

40. What is inheritance? Explain single level and multilevel inheritance.

41. Give the measures for preventing computer virus.

VI   **Answer any <u>TWO</u> questions, each question carries <u>FIVE</u> marks**   **2 x 5 = 10**

42. Given the Boolean function F(A,B,C, D) =∑(0,1,3,4,5,7,12,13,15), Reduce it using K-map.

43. Define a class named **rectangle** with following criteria
    1) Data members : **length, breadth**
    2) Member functions: **input()** and **output()**
    3) Define member functions outside the class to input and output length and breadth of a rectangle

44. Using given SQL table write the appropriate SQL query

Reg. no.	Name	DOB	Marks
40001	MMMM	15-06-2008	501
40002	NNNN	24-04-2008	325
40003	YYYY	10-07-2009	410

     i)   To develop the table with above fields

     ii)   To find total number of students

     iii)   To find highest marks

     iv)   To find lowest marks

     v)   To display all students information

PART-E

VII   (For Visually Challenged Students only)

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

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

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SUBJECT: COMPUTER SCIENCE (41) **BLUE PRINT FOR MQP-3** **CLASS : II PUC**

Question type	Number of questions	Marks
MCQ	15	15
FILL IN THE BLANKS (DATA BASE CONCEPTS) SA-1	5	5
SHORT ANSWERS SA-2	04(07)	08 (14)
SHORT ANSWER SA-3	04(07)	12 (21)
LONG ANSWERS	04(07)	20(35)
LONG ANSWER (HOTS)	02(03)	10(15)
TOTAL	34(44)	70(105)

SL. NO.	Chapter/ Content domain/ Unit/ Theme	No. of periods	Marks	Remember (36%) MCQ	SA-1	SA-2	SA-3	LA	Understand (30%) MCQ	SA-1	SA-2	SA-3	LA	Apply(15%) MCQ	SA-1	SA-2	SA-3	LA	HOTS (18%) MCQ	SA-1	SA-2	SA-3	LA
1	Typical configuration of Computer system	5	4	1								1											
2	Boolean algebra	10	8						1							1							1
3	Logic Gates	5	3								1								1				
4	Data structures	15	14					1									1	1	1				
5	OOP concepts	5	5										1										
6	Classes and objects	6	6																1				1
7	Function Overloading	6	6					1						1									
8	Constructors and Destructors	8	8	1							1							1					
9	Inheritance	7	6	1				1															
10	Pointers	5	4									1							1				
11	Data File handling	6	5				1				1												
12	Database concepts	12	11	1	3	1				2		1											
13	SQL commands	11	10			1			1		1												1
14	Networking Concepts	9	7	1					1				1										
15	Internet and Open source concepts	5	4	1			1																
16	Web Designing	5	4	1			1																
	TOTAL HOURS AND MARKS	120	105	7	3	4	9	15	3	2	8	9	10	1	0	2	3	10	4	0	0	0	15

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MODEL QUESTION PAPER-3

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 ALL the questions, each question carries ONE mark.   **20 x 1 = 20**

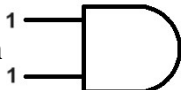**I**   **Select the correct answer from the choices given.**

1. Where L1 cache is located?

   (a) CPU   (b) Memory   (c) BIOS   (d) Bus

2. Which law is also called as double inversion rule

   (a) Complementarity   (b) Idempotence   (c) Commutative   (d) Involution

3. Given the logic diagram the output is

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

4. Assertion (A): A Stack is a LIFO data structure

   Reason (R): Addition and Deletion of items takes place at same end

   (a) A is True and R is correct explanation

   (b) A is False and R is correct explanation

   (c) A is True and R is False

   (d) A is False and R is also False

5. Examine the following C++ program segment, identify the error

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

  void main( )
  {
       example   p;
  }
```

   (a) error due to incorrect object declaration

   (b) error due to semicolon missing after class definition

   (c) error due missing of public access specifier

   (d) error due to invalid initialization of object

6. Statement (A): Friend function is a non member function
   Statement (B): It has full access right to the private and protected members of the class

   (a) A is True and B is False   (b) A is False and B is True
   (c) Both A and B are true   (d) Both A and B are False

7. Zero argument constructor is
   (a) default   (b) parameterized   (c) copy   (d) overloaded

8. if a class is derived from more than one base class then it is called as
   (a) Single level inheritance   (b) Hierarchical Inheritance
   (c) Multiple Inheritance   (d) Multilevel Inheritance

9. Which one of the following is valid C++ expression with respect to pointers **ptr1** and **ptr2** ?

   (a) ptr1 + ptr2   (b) ptr1 * ptr2   (c) ptr1 + 5   (d) ptr1 / 8

10. Each row of a table is called
    (a) Attribute   (b) Record   (c) Domain   (d) Field

11. Which one of the following command belongs to DDL in SQL?
    (a) INSERT   (b) CREATE   (c) DELETE   (d) GRANT

12. Correct expansion form of HTTP
    (a) Hyper Text Transfer Protocol   (b) Hyper Text Transmission Protocol
    (c) Hyper Transfer Transmission Protocol   (d) Hyper Transmission Text Protocol

13. An example for simplex communication mode
    (a) Walkie talkie   (b) Telephone   (c) Radio   (d) Mobile

14. It refers to the software whose source code is available to customers and it can be modified and redistributed without any limitations
    (a) Proprietary Software   (b) Open Source Software

    (c) Shareware   (d) Free Software Foundation

15. Which of the following is not a text resizing tag
    (a) <BIG>   (b) <H1>   (c) <SMALL>   (d) <TR>

II Fill in the blanks choosing the appropriate word/words from those given in the brackets. (DBMS, Diamond, Data mining, Data, rectangle, Network)

16. The collection of raw facts is called _____

17. _____ is a software that allows creation, definition and manipulation of database

18. _____data model organizes the data in a graph like structure

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

20. _____ is concerned with the analysis and picking out relevant information

PART-B

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

21. Prove algebraically that **X(X+Y) = X**

22. Realize OR gate using NAND gate.

23. What is destructor? Write the symbol used for destructor.

24. Differentiate between text and binary files

25. Mention any two DBMS users.

26. Give the difference between char and varchar data types in SQL.

27. Write the syntax and example of INSERT command in SQL

PART-C

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

28. What is UPS? Explain its types.

29. Write the memory representation of row-major matrix elements.

30. What is dynamic memory allocation? Mention the operators used to allocate and deallocate memory space dynamically.

31. Explain any three file opening modes in data file handling.

32. Write the advantages of random access method file organization.

33. What is e-commerce? Explain any two types of e-commerce

34. Write the HTML tags .
    i)   To add background colour to webpage
    ii) To add a single line break in a web page
    iii) To underline the text of the web page

PART-D

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

35. Write an algorithm to insert an element in to array.

36. Give any five applications of queue.

37. Define i) Class ii) Object   iii) Data abstraction iv) Encapsulation v) Polymorphism

38. What is inline function? Explain with suitable example.

39. Illustrate how to invoke parameterized constructor implicitly

40. Write the advantages of inheritance.

41. Explain network security protection methods.

42. Given the Boolean function F(A,B,C, D) =∑(0,1,2,3,5,8,9,10,11,13), Reduce it using K-map.

43. Define a class named **sum** with following conditions

   i)   Data members: **X and Y**

   ii) Member functions: **input()** and **output()**

   iii) Define member functions outside the class to input and output X and Y values

44. Using given SQL table of electricity bill, write the appropriate SQL query

RRNumber	Name	Billdate	Units	Amount
R0001	FFFF	05-08-2024	210	1470
R0002	GGGG	04-08-2024	300	2100
R0003	HHHH	05-08-2024	260	1820

   i)   To develop the table with above fields

   ii) To display the structure of a table

   iii) To find total number of customers

   iv) To find the total units consumed by all the customers

   v)   To display all customers records

PART-E

VII   (For Visually Challenged Students only)

3. What is the output of the two input NOR gate for the inputs X = 0 and Y =1 ?

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

****