

**Part-A**

- I. Answer all the questions.** **10×1=10M**
1. What is meant by plug and play device?
  2. How many minterms and maxterms are possible for a function with 4 variables.
  3. Convert the expression  $a+b*c$  to postfix.
  4. What are data members?
  5. What is the purpose of the operators & and \* related to pointers.
  6. What is a candidate key?
  7. Expand SMS.
  8. What is network topology?
  9. What ia an open source software?
  10. Write any one difference between XML and HTML.

**Part-B**

- II Answer any 5 questions. Each carries 2 marks.** **5×2=10M**
11. State and prove commutative law using truth table.
  12. What would be the complement of  $x + \bar{x}y + \bar{x}\bar{z}$
  13. Define polymorphism. Give an example.
  14. What is the need of a constructor?
  15. What is the difference between get( ) and getline( ).
  16. Explain selection operation in SQL.
  17. Give the syntax of UPDATE command in SQL.
  18. Explain any two types of virus.

**Part-C**

- III Answer any 5 questions. Each carries 3marks.** **5×3=15M**
19. What is a port? Explain serial and parallel port.
  20. Draw the circuit diagram for the expression  $y = \bar{x}\bar{y} + \bar{x}\bar{z} + \bar{y}\bar{z}$
  21. Write an algorithm to insert an element into an array at the given position.
  22. Write a note on pointer arithmetic.

23. Explain the different relative positions with respect to `seekg()`.
24. Mention applications of data base.
25. Write a note on e-commerce.
26. Explain any 3 form elements.

### Part-D

**IV Answer any 7 questions. Each carries 5 marks.**

**$7 \times 5 = 35M$**

27. Reduce the following boolean expression using K-MAP  
$$f(w,x,y,z) = \overline{w} \overline{x} \overline{y} \overline{z} + \overline{w} \overline{x} y z + \overline{w} x \overline{y} \overline{z} + \overline{w} x y \overline{z} + w \overline{x} \overline{y} z + w \overline{x} y z .$$
28. Write an algorithm to perform push and pop operations on a stack.
29. Write a note on linked list.
30. Explain the applications of object oriented programming.
31. How do we use objects as function arguments? Explain with a programming example.
32. What is function overloading? Explain with a suitable example.
33. Write a c++ program to create a base class to read and display the roll no and name of a student.  
Calculate the total marks by accepting marks of 2 subjects in the derived class using the concept of single level inheritance.
34. Mention the types of constructors. Explain any one in detail.
35. Explain ISAM.
36. Explain any five aggregate functions in SQL.
37. Explain the advantages and disadvantages of networking.

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