

**Part-A**

**I. Answer all the following questions. Each question carries 1 mark. 1x 10 =10**

1. What is a system bus?
2. What is a universal gate?
3. What is a binary tree?
4. What is an object?
5. Write the syntax for declaration of pointers to objects.
6. What is metadata?
7. What is a gateway?
8. What is a firewall?
9. What is open source software?
10. What is the use of PHP?

**Part-B**

**II. Answer any 5 questions. Each question carries 2 marks. 2 x 5 =10**

11. State and prove De Morgan's theorems.
12. State and prove Absorption law.
13. Write the limitations of OOPs.
14. What are the disadvantages of default constructor?
15. What are the basic operations on binary file in C++?
16. Define (a) Entity (b) Attribute
17. Explain any two SQL constraints.
18. Write the advantages of FTP.

**Part-C**

**III. Answer any 5 questions. Each question carries 3 marks 3x 5 =15**

19. Explain cache memory with diagram.
20. Explain XOR gate.
21. Write the applications of queue.
22. What is a pointer? Write the significance of '&' and '\*'.
23. Mention the member functions belonging to (a) ifstream (b) ofstream (c) fstream.
24. Explain direct access file organization.
25. Define (a) W3C (b) Shareware (c) FLOSS
26. What are the uses of client side scripts?

**Part-D**

**VI. Answer any 7 questions. Each question carries 5 marks 5x7= 35**

27. Simplify the following  
 $f(A, B, C, D) = \pi(0, 1, 3, 5, 6, 7, 10, 14, 15)$  using k map.
28. What is a linked list? Explain its types.
29. Write an algorithm to delete an element at a given position in an array.
30. Write the applications of OOP.
31. Explain member functions inside class definition with syntax and example.
32. Explain friend function with syntax and example.
33. Explain copy constructors with syntax and example.
34. What is inheritance? Write its advantages.
35. Write the difference between manual and computerized data processing.
36. Explain the following commands (a) update (b) delete (c) insert (d) drop (e) select
37. Explain network topologies.