BCS21 — C++ AND DATA STRUCTURE

Time : Three hours   Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Mention special operators in C++.

2. Give a manipulator with example.

3. Give function prototyping with an example.

4. Give the features of destructor.

5. What are different forms of inheritance? Give an example for each of them.

6. List any two classes for file stream operations.

7. Give any four primitive data types.

8. Mention the purpose of singly and doubly linked list.

9. Compare binary tree with binary search tree.

10. What is DFS?

Answer ALL questions.

11. (a) Write a program to find a number is prime or not using if-else statement.

Or

(b) Explain conditional control repetitive statements with flow diagram and examples.

12. (a) Describe data types in C++ in Details.

Or

(b) Explain following with respect to C++ with examples. (i) new operator (ii) destructor.

13. (a) Define polymorphism and explain virtual functions with example.

Or

(b) List and explain in brief various functions required for random access file operations.

14. (a) Show how to implement linked stack operations.

Or

(b) Convert the following infix expression to post fix notation ((a+2)*(b+4)) − 1 and evaluate the result.

15. (a) Draw a tree structure for (a + b) * c/d − e. Convert into postfix and prefix form using tree traversals.

Or

(b) Explain any five terminologies used in Graph.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Develop a C++ Program to find multiplication table of a given number using for loop.

17. Show with C++ programming example how an = = operator can be overloaded.

18. Show the use of multiple inheritance with the help of proper programming example.

19. What is linked queue? Show how to implement it with necessary algorithms.

20. Give the procedure for Dijkstras shortest path and Show how it is working on a graph to find the shortest path.