**MAY 2022**

# P/ID 16301/PIT1A/ PCATA

Time : Three hours Maximum : 80 marks

PART A — (10 × 2 = 20 marks)

Answer any TEN questions.

1. Mention the advantages of OOP approach.

2. Define the term inline function?

3. List any two operators which cannot be overloaded.

4. What is a class? How is it created?

5. Define the term function overloading.

6. Define the term data structure.

7. What are the properties of an Array?

8. Mention any two error handling functions.

9. Translate the given infix expression into its equivalent postfix expression:

   A*(B+D)/E-F*(G+H*K)

10. What is the role of stack in implementation of recursive algorithms?

11. Define the term weighted Graph.

12. What are the characteristics of good Hash function?

PART B — (5 × 6 = 30 marks)

Answer any FIVE questions.

13. Write a C++ program to perform basic arithmetic operations (Addition, Subtraction, Multiplication and Division) between two numbers using function.

14. Describe hierarchical inheritance with an example program.

15. Write a C++ program to overload pre-increment and post-increment operators.

16. Write a program to illustrate the use of command-line arguments.

17. Discuss the various applications of Queue.

18. With a neat diagram, explain the concept of Binary Tree.

19. Explain the any one tree traversal algorithm. Illustrate with an example.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

20. Explain the following with suitable program:
    (a) Friend function
    (b) Virtual function

21. Explain different types of constructors with suitable examples.

22. Explain file handling functions with code examples.

23. Write the procedure to add two polynomials using Linked List. Illustrate with an example.

24. With a neat sketch explain DFS and BFS traversals in a Graph. Give suitable example.

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