

**DECEMBER 2023**

**P/ID 16301/PIT1A/  
PCATA**

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Time : Three hours

Maximum : 80 marks

**PART A — (10 × 2 = 20 marks)**

Answer any TEN questions

1. List any two special operators used in C++.
2. What is an identifier?
3. Define polymorphism.
4. State the uses of constructor.
5. Define method overloading.
6. Write any two classes used for file I/O operations.
7. Define data structure. List any two data structures.
8. List the applications of queue.
9. Define polynomial.
10. What is terminal node in a Tree?

11. Define cycle in a graph.
12. What is Breadth First traversal?

PART B — ( $5 \times 6 = 30$  marks)

Answer any FIVE questions

13. Write a C++ program to swap/ interchange two variables using function.
14. Discuss inline function with an example and Write the advantage over member function.
15. Explain Multiple inheritance with an example.
16. Explain unary operator overloading with an example.
17. Elaborate file opening modes in detail.
18. Write a program to find the factorial of a given number using recursion.
19. Explain the steps to convert the following infix expression  $a^b/(c^d)^e + f$  into postfix expression.

PART C — ( $3 \times 10 = 30$  marks)

Answer any THREE questions

20. Elaborate object-oriented features in detail.
21. State the need of virtual function and explain with an example.
22. Elaborate how to read a character, string from a file and write a character and string on to the file.

23. Explain the operations performed on singly linked list in detail.
  24. Elaborate the types of binary tree traversal with an example.
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