

Q. P. Code: 08241

(Time: 2  $\frac{1}{2}$  hours)

[Marks: 75]

Please check whether you have got the right question paper.

- N. B.: (1) All questions are compulsory.  
 (2) Make suitable assumptions wherever necessary and state the assumptions made.  
 (3) Answers to the same question must be written together.  
 (4) Numbers to the right indicate marks.  
 (5) Draw neat labeled diagrams wherever necessary.  
 (6) Use of Non-programmable calculator is allowed.

1. Attempt any three of the following: 15

- What is procedure oriented Programming? What are its characteristics?
- Differentiate between Object Oriented and Procedure Oriented Programming paradigms.
- Discuss the need and advantages of Object Oriented Programming.
- Discuss various applications of Object Oriented Programming.
- What do you mean by Dynamic and static binding.
- Write a short notes on (i) Object (ii) Class

2. Attempt any three of the following: 15

- What is a class? Illustrate the use of class with a simple c++ program.
- What are inline functions? How an outside function can be made inline?
- What is a constructor? Explain its characteristics. List various types of constructors?
- What are friend functions? What are their characteristics? Write a small program to illustrate the use of a friend function.
- Explain the use of parameterized constructors with a programming example.
- What do you understand from nesting of member functions? Explain with suitable programming example.

3. Attempt any three of the following: 15

- What is function overloading? Explain with suitable example.
- What is operator overloading? List the operators which can be overloaded and which cannot be overloaded.
- Write a c++ program to overload unary minus operator.
- What are virtual functions? Explain.
- Define the following  
 (i) Abstract Class (ii) Pure Virtual Function
- What is a this pointer? Write a program to illustrate its use.

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4. Attempt any three of the following:

15

- a. What do you understand from the concept of inheritance? Explain its various types.
- b. Explain the use of various visibility modes used in inheritance.
- c. Discuss the role of constructors in derived classes in detail.
- d. What is an exception? What are advantages of exception handling mechanism in a program?
- e. Explain the concept of throw and catch with suitable example.
- f. Write a c++ program to illustrate multilevel inheritance.

5. Attempt any three of the following:

15

- a. What are class templates? Explain their use. How a class template can be declared?
- b. Explain function template with a programming example.
- c. Write a c++ program to implement bubble sort using function template.
- d. Explain the working of files in c++.
- e. Explain various methods to detect end of file in a c++ program.
- f. Explain the following
  - (i) seekg()
  - (ii) seekp()