[5869]-249

S.E. (Electronics / E & TC/Electronics & Computer)
OBJECT ORIENTED PROGRAMMING (2019 Pattern)
(Semester - IV)

Time : 2½ Hours]   *[Max. Marks : 70*

Instructions to the candidates:

1) *Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.*
2) *Neat diagrams must be drawn wherever necessary.*
3) *Figures to the right side indicate full marks.*
4) *Use of calculator is allowed.*
5) *Assume suitable data if necessary.*

Q1) a) What is operator overloading? Why it is necessary to overload an operator? **[6]**

    b) Write a program in C++ to use scope resolution operator. **[6]**

    c) What is friend function? What are the merits & demerits of using the friend function? **[6]**

OR

Q2) a) What are the rules for over loading operators. **[6]**

    b) Which operators can not be overloaded? Write steps to overload + operator so that it can add two complex numbers. **[6]**

    c) Write down program to overload unary operators? (Any three operators). **[6]**

Q3) a) Explain virtual base class & virtual function with example? **[6]**

    b) What does inheritance mean in C++? What are different forms of inheritance? Give example of each. **[6]**

    c) Discuss the ways in which inheritance promotes software reuse, saves time during program development and helps prevent errors. **[6]**

OR

Q4) a) What is the ambiguity that arises in multiple inheritance? How it can be overcome. Explain with example. **[6]**

b) What are types of inheritance? Explain in detail. **[6]**

c) Discuss the role of access specifiers in inheritance and show their visibility when they are inherited as public, private protected. **[6]**

Q5) a) Write a C++ program involving a function template. **[5]**

b) Explain exception handling mechanism in C++? Write a program in C++ to handle divide by zero exception. **[7]**

c) Explain class template and function template with example. **[5]**

OR

Q6) a) Explain class template using multiple parameters? Write a program in C++. **[7]**

b) Explain name space with example. **[5]**

c) What is stream? Explain types of streams available in C++. **[5]**

Q7) a) What is File mode? Explain any four modes supported by C++. **[6]**

b) Explain error handling during file operations. **[5]**

c) What is the difference between opening a file with construction function & open ( ) function. **[6]**

OR

Q8) a) Write a program using the open ( ), eof ( ) & getline ( ) functions to open & read file contents line by line. **[6]**

b) Explain file functions for text file and binary file operations. **[7]**

c) Explain file opening modes in detail. **[4]**

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