**[6179]-242**

# S.E. (Computer / Computer Science & Design Engg./A.I&D.S.)

## OBJECT ORIENTED PROGRAMMING

## (2019 Pattern) (Semester-III) (210243)

*Time : 2½ Hours]* *[Max. Marks : 70*

*Instructions to the candidates:*
1) *Answer Q.No.1 or Q.No.2, Q.No.3 or Q.No.4, Q.No.5 or Q.No.6, Q.No.7 or Q.No.8.*
2) *Neat diagrams must be drawn wherever necessary.*
3) *Assume suitable data if necessary.*
4) *Use of Calculator is allowed.*

*Q1)* a) Differentiate between compile time polymorphism and run time polymorphism. **[5]**
   b) How do you declare and define a pure virtual function in C++? Explain with help of a program. **[6]**
   c) Write a C++ program for unary increment (++) and decrement (--) operator overloading. **[6]**

OR

*Q2)* a) What is operator overloading and why it is useful? Which Operators cannot be overloaded. **[5]**
   b) How virtual functions are implemented in C++? Explain with help of a program. **[6]**
   c) Write a program to binary (+) and binary (-) operator in C++. **[6]**

*Q3)* a) Explain the use of command line arguments. If we want to pass command line arguments what will be prototype of main function and explain its arguments along with example. **[5]**
   b) Explain the following file handling functions (solve any three). **[6]**
      i) seekg ( )
      ii) tellg ( )
      iii) seekp ( )
      iv) tellp ( )
   c) Write a program Using the C++ file input and output class with open(), get(), put(),close() methods for opening, reading from and writing to a file. Use append mode while opening the file for writing. **[7]**

OR

*P.T.O.*

*Q4)* a) List and Explain different Mode bits used in open () function, while opening a file. (Any five). **[5]**

b) Define a class Person that has three attributes viz name, gender and age. Write a C++ Program that writes an object to a file and reads an object from a file. **[6]**

c) Explain what is fstream, ifstream and ofstream with help of example? Provide the hierarchy of stream classes in C++. **[7]**

*Q5)* a) Discuss exception handling mechanism in C++ with syntax. **[5]**

b) Write a program to handle exception using class type exception. **[6]**

c) Demonstrate function template with suitable code in C++. **[6]**

OR

*Q6)* a) Explain exception handling in constructor, destructor. **[5]**

b) Write a program to demonstrate class template with example. **[6]**

c) Demonstrate overloading function template with suitable code in C++.**[6]**

*Q7)* a) What is an iterator? Explain how to use an iterator in C++ program with example. **[5]**

b) What is an algorithm in STL? Enlist algorithms and explain any algorithm in detail. **[6]**

c) What is a Map ? Write a program to implement map in C++. **[7]**

OR

*Q8)* a) What is STL? Enlist and explain in short major components of STL.**[5]**

b) What is iterator and algorithm? Explain each of them with example. **[6]**

c) What is a vector? Enlist and explain any 5 functions of vector by using a C++ program. **[7]**

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