

Roll No. ....

Total Pages : 03

**GSM/M-21**

**1637**

COMPUTER SCIENCE

Object Oriented Programming with C++

Paper : I

Time : Three Hours]

[Maximum Marks : 40

**Note :** Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. **1** is compulsory. All questions carry equal marks.

**(Compulsory Question)**

1. Define the following : **4×2=8**
- (a) Inline Function
  - (b) Abstract Class
  - (c) New and delete operator
  - (d) Data hiding and encapsulation.

**Unit I**

2. (a) Differentiate between procedures oriented and object oriented programming language. **4**
- (b) Define scope resolution operator by giving its syntax, purpose and example. **4**

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3. (a) What do you mean by static data member and member function ? Explain with suitable programming example. **5**
- (b) Create a student class having roll no. and subjects as data member. Write a member function to display the result. **3**

### **Unit II**

4. (a) Define console stream classes available in C++. Explain various manipulators available in console and manipulator classes with the help of suitable examples. **5**
- (b) Briefly explain the hierarchy of console stream classes. **3**
5. Define Constructor and their purpose in a class. Explain constructor overloading by giving suitable example. **8**

### **Unit III**

6. (a) Define friend function. What are the rules for defining friend function ? Explain the benefits of friend function. **4**
- (b) Write a friend function for finding largest of three numbers. **4**

7. (a) Explain various string handling functions available in C++ with their syntax, purpose and example. **5**
- (b) Write a program to print reverse of a string using class. **3**

#### **Unit IV**

8. (a) Define Static polymorphism with its characteristics. **3**
- (b) Write a program to overload arithmetic operators (+, -, \*, /) for complex numbers in C++. **5**
9. Define Operators in C++. What are various types of operators in C++ ? Explain the precedence and associativity rules of operators in detail. **8**