

Total No. of Questions : 4]

SEAT No. :

PE-548

[Total No. of Pages : 2

[6578]-21

**S.E. (Computer Engineering/Computer Science & Design/
Artificial Intelligene & Data Sciece/Computer Science) (Insem.)
OBJECT ORIENTED PROGRAMMING (OOP)
(2019 Pattern) (Semester - III) (210243)**

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates :

- 1) *Attempt Q.1 or Q.2, Q.3 or Q.4.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *Assume suitable data if necessary.*

Q1) a) What is friend function? Explain with suitable example. **[3]**

b) What are the different ways to define member functions of class? Give example of each. **[6]**

c) Write C++ code that defines a class and declares an array of objects to that class. **[6]**

OR

Q2) a) List the features of object oriented programming. **[3]**

b) Explain significance of static keyword in C++. Give example. **[5]**

c) Write a class "student" with attributes like name, roll number & marks. Include member functions to set & display these attributes. **[7]**

Q3) a) Explain the void and null pointer with example. **[4]**

b) Define function overriding in C++ and write a program to demonstrate the same. **[6]**

c) Write short notes on type of inheritance with respect to **[6]**

- i) Single inheritance
- ii) Multiple inheritance
- iii) Hierarchical inheritance.

P.T.O.

OR

- Q4)** a) What is a virtual base class? Explain with an example. [4]
- b) Explain public, private and protected inheritance. Give example of protected inheritance with explanation. [5]
- c) What are wasted classes, how to access the members of wasted classes. Explain using example? [6]

