

Total No. of Questions : 4]

SEAT No. :

PC401

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S.E. (Computer Engineering) (Computer Science & Design Engg.)/  
(Artificial Intelligence & Data Science Engg.) (Computer Science) (Insem)

**OBJECT ORIENTED PROGRAMMING**  
**(2019 Pattern) (Semester-III) (210243)**

*Time : 1 Hour]*

*[Max. Marks : 30*

*Instructions to the candidates:*

- 1) Answer Q1 or Q2, Q3 or Q4.
- 2) Assume suitable data if necessary.

- Q1)** a) Compare Procedure Oriented programming vs Object Oriented Programming. [4]  
b) Explain C++ data type union and enumeration with example. [5]  
c) Explain static data and static function with program. [6]

OR

- Q2)** a) What is encapsulation? Why it is important in object-oriented programming? [4]  
b) What is the purpose of constructor and destructor in object-oriented programming? How are they used in class? [5]  
c) Write a class "Person" with attributes like name, age & address. Include appropriate constructor & member functions to set & display these attributes. [6]
- Q3)** a) Explain friend function. Write a program to demonstrate it in C++. [5]  
b) Discuss the memory management using keywords 'new' and "delete". [5]  
c) What is multi-level inheritance? Explain with an example, how it can be implemented in C++. [5]

OR

- Q4)** a) Explain friend class. Write a program to demonstrate friend class in C++. [5]  
b) Explain Function overloading and function overriding with example. [5]  
c) Explain public, private and protected inheritance And give example of private Inheritance with explanation. [5]

