

Total No. of Questions : 8]

SEAT No. :

P-9136

[Total No. of Pages : 2

[6179]-262

S.E. (Information Technology)

OBJECT ORIENTED PROGRAMMING

(2019 Pattern) (Semester - III) (214444)

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 indicate full marks.
- 4) Assume suitable data, if necessary.

- Q1)** a) What is a constructor? Explain the Default constructor with an example. [6]  
b) Create a Bookshop inventory class. Use appropriate constructors for Bookshop Management. [6]  
c) Can we overload the constructor? Explain with Example. [6]

OR

- Q2)** a) Explain the Parameterized constructor and Copy constructor with an example. [6]  
b) What is garbage collection? Explain the finalize () method in detail. [6]  
c) What is a destructor? Differentiate between Constructor and Destructor. [6]

- Q3)** a) What is inheritance? Explain different types of Inheritance. [6]  
b) What is an interface in Java? What is the difference between interface and abstract class? [5]  
c) What is polymorphism? What are the different types of polymorphism? Explain with an example. [6]

OR

P.T.O.

- Q4)** a) Design and develop inheritance for a given case study, identify objects and relationships and implement inheritance wherever applicable, Employee class has Emp\_name, Emp\_id, Address, Mail\_id and Mobile\_no as members. Inherit the classes: Programmer, Team Lead, Assistant Project Manager and Project Manager from the employee class. Add Basic Pay (BP) as the member of all the inherited classes with 97% of BP as DA, 10% of BP as HRA, 12% of BP as PF, and 0.1% of BP for staff club fund. Generate pay slips for the employees with their gross and net salary. [9]
- b) Explain the concept of Method Overloading and method overriding with examples. [8]

- Q5)** a) What is the Exception exception-handling mechanism in Java? Write a java program to handle the Divide by zero exception. [8]
- b) Explain user-defined exception with an example. [5]
- c) Explain Collection classes in detail. [5]

OR

- Q6)** a) What is a generic method? Explain with a suitable example. [6]
- b) Explain the use of finally in exception handling with an example. [4]
- c) Write a program Java to handle Array Index Out of Bounds Exception and Null Pointer Exception with the program. [8]

- Q7)** a) Define the term Stream, Explain various stream classes. [8]
- b) Design a Java program for employee management with following operations - [9]
- i) Create file
  - ii) Write data into file
  - iii) Read data from file. Consider Name, employee id and department as attributes of employee.

OR

- Q8)** a) Which are different types of Design patterns? [6]
- b) Explain the Iterator Pattern and its advantages in detail. [6]
- c) Explain the Adapter pattern and its advantages in detail. [5]

