

Total No. of Questions : 8]

SEAT No. :

PB-3654

[Total No. of Pages : 2

[6261]-62

S.E. (I.T.)

**Object Oriented Programming
(2019 Pattern) (Semester - III) (214444)**

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Answer Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8.*
- 2) *Neat diagram must be drawn wherever necessary*
- 2) *Figures to the right side indicate full marks.*
- 3) *Assume suitable data if necessary.*

- Q1)** a) Write a short note on 'Symbolic Constants' in Java. **[9]**
b) Discuss Constructor Overloading with suitable code. **[9]**

OR

- Q2)** a) How are objects initialized dynamically? Explain with an example. **[9]**
b) What is garbage collection in OOP? Explain finalize() method in Java. **[9]**
- Q3)** a) Define a class 'shape' with abstract method compute_area(). Derive the classes 'circle' and 'rectangle' from 'shape' class. Calculate the area of circle and rectangle using Dynamic Binding. Use appropriate instance variables and methods whenever necessary. **[9]**
b) Discuss diamond problem in detail? How it can be solved? **[8]**

OR

- Q4)** a) Design a class 'person1' with instance variables 'name' and 'age'. Derive a class 'person2' from 'person1' class with instance variable 'gender'. Derive a class 'employee' from 'person2' class with instance variable 'address'. Create a database of the 3 employees. Use the appropriate methods to accept and display the data. **[9]**
b) Define Polymorphism? Differentiate between Compile Time Polymorphism and Run Time Polymorphism with an example. **[8]**

P.T.O.

Q5) a) Can we throw an exception explicitly or manually? If 'yes', justify your answer with an example. [9]

b) What is Generic Programming? Discuss any four methods of LinkedList class with their syntax. [9]

OR

Q6) a) Differentiate between an array and ArrayList class. Explain following methods of ArrayList class. [9]

i) add()

ii) get()

iii) remove()

b) Implement a program which handle ArrayIndex Out of Bound Exception [9]

Q7) a) What is a Design Pattern? Write a short note on 'Iterator' design pattern. [9]

b) How do you write to a file and read from a file using FileWriter and FileReader class, respectively? [8]

OR

Q8) a) How are input/output exceptions handled in File Handling? Explain with an example [9]

b) Is it possible to concatenate two or more files and save them in a different file? If 'yes', justify your answer with an example. [8]

