Total No. of Questions : 8]

## PA-1245

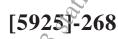


[Total No. of Pages : 2

[Max. Marks : 70

[9]

**19**1



## S.E. (Information Technology) OBJECT ORIENTED PROGRAMMING (2019 Pattern) (Semester - III) (214444)

*Time : 2<sup>1</sup>/<sub>2</sub> Hours] 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) Figurest to the right side indicate full marks.
- 4) Assume suitable data if necessary.

Q1) a) What is Constructor? What are the characteristics of the Constructor?Explain Constructor Overloading with an example? [9]

- b) <sup>W</sup>Write a short note on :
  - i) Garbage collection in Java
  - ii) Destructor in C++
- Q2) a) Design a class 'Complex' with data members for real and imaginary part. Provide default and Parameterized constructors. Write a program in JAVA to perform a Subtraction of two complex numbers. [9]
  - b) Discuss with example Dynamic initialization of object in Java.
- Q3) a) Define Inheritance. What are the types of Inheritance? How can you inherit a class in Java? [9]
  - b) What is polymorphism? Explain compile time and run time polymorphism. [8]

## OR

- Q4) a) Differentiate between method overriding and method overloading. Explain method overriding concept with an example. [9]
  - b) What is interface in java? How to declare an interface, write a syntax? Can we achieve multiple inheritance by using interface? Justify with an example.
    [8]

*P.T.O.* 

- What is an exception? Explain the following terms with respect to **Q5**) a) exception handling: State. [9]
  - i) try
  - ii) catch
  - throw iii)
  - iv) finally
  - Write a generic method to count the number of elements in a collection b) that have a specific properties like odd integers, prime numbers and palindrome. [9]

## OR

- Explain ArrayList class with an example. **Q6**) a)
  - Write a java program to accept and display the month number. Throw b) number format exception if improper month number is entered. [9]

[9]

- Explain FileinputStream class. Write any four methods of File Input stream **Q7**) a) class with their syntax. [9]
  - b) Explain following File operations using File class: [8]
    - Create a File i)
    - Read from a File ii)
    - Write to a File iii)
    - Close a File iv)
- **Q8**) a) Write a short note on
  - Iterator i)
  - ii) Singleton
  - Implement a program for maintaining a database of student records using b) Files. Student has Student-id, name, Roll\_no, Class, marks and address. Display the data for few students. [9]
    - Create Database i)
    - ii) **Display Database**
    - **Delete Records** iii)
    - Update Record iv)
    - Search Record v)

[5925]-268