



Q .P. Code : 26234

(3 Hours)

Total Marks : 80

N.B 1) Question **no. 1** is compulsory.

2) Attempt **any three from remaining** questions.

- Q. 1 a** What role does "interface" play in multiple inheritance. Explain with example. [10]
Demonstrate use of interface to achieve polymorphism with example.
- b** Differentiate between abstract class and interface [5]
- c** Create a method size(Object z), that accepts a single refernce argument, z. If z refers to "Rectangle" then size(z) returns its area, and if z is a refernce to a "Cube" then size(z) returns its volume. If z refers to an object of any other class, then size(z) returns -1. [5]
(Hint: Use instanceof operator)
- Q. 2 a** Explain different types of relationships among entities. [10]
Define the relationships among the objects of given sentences:
- 1) Employee works on project.
 - 2) Customer places order.
 - 3) WebOrder, TelephoneOrder is a kind of order.
- b** What is the advantage of clause "finally" [10]
List any 2 exceptions defined in Java. Explain use of try, catch and use of multiple catch block .
- Q. 3 a** Create class Student (roll number, name). [10]
Class Test (mark1, mark2) inherit student class.
Create interface Sport with data member as sports_mark and method set_sportMark().
Create class Result which extends Test and implements Sport and has a method named calculate which finds total as (total=marks1+marks2+sports_mark) and method which display all the details .
Create an object of Result class and show result.

- b What is a class? How does it accomplish data hiding? What is the need of a constructor? [10]
- Q. 4 a Explain access specifiers in JAVA. Can all methods of a class be private? [10]
- b Which are the two different ways to create a thread? Write a multithreaded program to show inter-leaving of actions from 2 threads and display ABABABABABABAB [5]
- c Write an applet program to display [5]



- Q. 5 a Explain different features of JAVA. [10]
- b Write a program to perform following operations on vector [10]
1. To add city name to vector
 2. To remove city name from vector
 3. To display all city name
- Q. 6 a Write a program to create a Package College with class Student and Marks [10]
- Create class Student with data member as roll_num and Name. Accept the value from theuser in getdata() and display it in putdata()
- Create class Marks that inherits Student with data member as marks (It is array accepting marks for 5 different subject). Accept the Marks in getdata() , Calculate the sum of marks display result of student in putdata() based on percentage (if >=90 display Merit if >=75 and <90 Distinction if >= 60 and <75 First class)
- Create class Demo with Main function, create the object of the appropriate class and display the result for 2 different students.
- b Explain System.arraycopy() method with example. [5]
- c Differentiate between Array and Vector. [5]
