

(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 reference argument, z. If z **[5]**

refers to “Rectangle” then size(z) returns its area, and if z is a reference to a “Cube” then size(z) returns its volume. If z refers to an object of any other class, then size(z) returns -1.

(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.

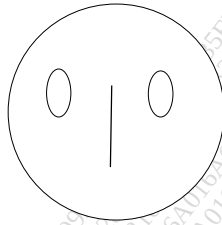
Create interface Sport with data member as sports_mark and method set_sportMark().

Create class Result which extends Test and implements Sport and has a method named calculate which finds total as (total=makes1+makes2+sports_mark) and method which display all the details .

Create an object of Result class and show result.

Q .P. Code : 26234

- 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 the user 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]
