



Indian Association for the Cultivation of Science
(Deemed to be University under *de novo* Category)
Master's/Integrated Master's-PhD Program/Integrated Bachelor's-Master's
Program/PhD Course
Mid-Semester Examination-Spring 2024

Subject: Object-Oriented Programming with Java
Full Marks: 25

Subject Code(s): MCS1201B
Time Allotted: 2 h

Group A

1. Answer any five questions. 1x5

- i) Write a difference between a break and a continue statement
- ii) Define multilevel inheritance.
- iii) What is constructor overloading?
- iv) What do you mean by abstraction?
- v) Define Encapsulation.
- vi) What is the static method?
- vii) What do you mean by identifier?

Group B

(Answer any four questions)

- 2. A) What do you mean by object-oriented programming? 1+2+2
B) Define class and object
C) What are the differences between call by value and call by reference?
- 3. A) What is a constructor? 1+4
B) Differentiate the overloading of methods and overloading of constructors with an example.
- 4. A) What is inheritance? 1+2+2
B) Why is inheritance important in Object object-oriented programming?
C) Explain with an example the use of "this" and "super" keywords in a Java program.

5. Write a program to input and store elements in a 2D array of size 3x3. Then find the maximum of each column and the sum of elements in the left diagonal. 5

Example

2	4	7
1	6	8
3	5	7

Output:

Maximum element in the first column=3

Maximum element in the second column=6

Maximum element in the third column=8

Sum of the left diagonal elements=2+6+7=15

6. Write a class with the name "Area" using constructor overloading. Then compute the area of a triangle, a rectangle, and a square. 5
7. Create a class named "Student" with the data members roll and name. Create a subclass "Test" inherited from "Student". The subclass "Test" has three data members for 3 subjects sub1, sub2, and sub3. The subclass "Result" inherited from "Test" contains the data member total for calculating the total of 3 subjects. Implement this multilevel inheritance using constructor. Take appropriate methods for displaying the values of the data members. 5