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
End-Semester Examination-Spring 2023

Subject: Object-Oriented Programming with Java Subject Code(s):*MCS1201B*
Full Marks: 50 *Time Allotted: 3 h*

[Answer any five questions]

(5*10=50)

1. a) Explain the different properties of object-oriented programming language.
   b) Explain static keywords in Java.
   c) Write a program to find the factorial of a number using class and object.

(3+3+4)

2. a) Describe the different life cycles of an Applet.
   b) Define the term deadlock.
   c) What is wrapper class?

(4+3+3)

3. a) What is an Exception? How it is different from Error.
   b) Write a program to implement multiple catch blocks for one try block.
   c) Write down the difference between throw and throws.
   d) Define checked and unchecked exceptions.

((1+1)+3+3+2)

4. a) Why synchronization is required in Java? Explain with an example.
   b) Explain static binding and late binding with examples.
   c) Write a Java program to copy one file to another file.

(3+3+4)

5. a) Describe the following String function in Java. (any 3)
      i)   equals()
      ii)   compareToIgnoreCase()
      iii) toString()
      iv)   split()
   b) Write a swing program to check whether a number is prime or not.

((2+2+2)+4)

6. a) Differentiate between "Final", "Finally" and "Finalize" statements.
   b) What is inner class? How many different ways it can be achieved? Explain
      each of them with proper examples.

(4+(1+1+4))

7. a) How many different parameter-passing mechanisms are present in Java? Explain each of them with proper examples.
   b) What is private access specifier? Explain with an example, how it is different from public and protected access specifiers.
   c) Why java does not support destructor?

   $((1+3)+(2+2)+2)$