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**MCS-024**

**M. C. A. (REVISED)/B.C.A. (REVISED)**

**Term-End Examination**

**December, 2022**

**MCS-024 : OBJECT ORIENTED TECHNOLOGIES  
AND JAVA PROGRAMMING**

*Time : 3 Hours*

*Maximum Marks : 100*

*Weightage : 75%*

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***Note :** Question No. 1 is compulsory. Attempt any  
**three** questions from the rest of the  
questions.*

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1. (a) What is method overloading ? Explain with suitable example. 5
- (b) Explain the relationship between inheritance and polymorphism through an example. 5
- (c) Distinguish between 'Final', 'Finally' and 'Finalize' keywords. Give example for each.

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- (d) Explain container class, and discuss its significance in Java GUI programming. 4
  - (e) Explain each component of the statement 'public static void main (string args[ ])'. 5
  - (f) What is Java applet ? How is it different from Java application program ? 5
  - (g) Explain the Java RMI architecture with the help of a diagram. 5
  - (h) What is Java Bean ? Give advantages of java beans in programming. 5
2. (a) Explain the usage of Grid Layout and Grid Bag Layout in a Java Applet. 5
- (b) How String Class differs from StringBuffer Class ? Explain with suitable example. 5
  - (c) What is an applet ? Discuss all the phases of applet life cycle. 5
  - (d) Explain GET and POST methods of servlet programming, with the help of suitable code. 5

3. (a) Write a java program to create a file named 'ignou-txt' and write 'Hello IGNOU' in it. 6
- (b) Write a java program for 'writing output on console' using `PrintWriter( )` method. Give suitable comments for readability of your program. 6
- (c) What is exception in Java ? What are the basic causes of occurrence of an exception ? Write a program in Java, to show the concept of exception handling. Support your program with suitable comments. 8
4. (a) What is inheritance ? How is inheritance related to interface ? Explain, how multiple inheritance can be implemented using interface in Java. Give suitable example. 10
- (b) Explain the steps of JDBC in establishing a connection for creating a dynamic website for INSERT/UPDATE the attendance record for employees of an organization. 10

5. (a) Write a Java program which takes two  $3 \times 3$  matrices as input and find sum of the two matrices ? Define constructor for initializing the matrix object. Give suitable comments for readability of your code. 10
- (b) Write a Java program to print factorial of a number entered by user. 5
- (c) Compare object oriented programming and structured programming. Give advantages of object oriented programming over the structured programming. 5