MASTER OF COMPUTER APPLICATIONS (MCA) (REVISED)/ BACHELOR OF COMPUTER APPLICATIONS (BCA) (REVISED)

Term-End Examination

June, 2024

MCS-024 : OBJECT ORIENTED TECHNOLOGIES AND JAVA PROGRAMMING

Time : 3 Hours   *Maximum Marks : 100*

Weightage : 75%

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

1. (a) What is 'this' keyword ? Explain its usage with an example. 5

   (b) Compare AWT and Swing components. 5

   (c) Write a Java program to find the factorial of a number given by the user. Support your code with suitable comments. 5

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(d) Discuss the life cycle of Applet, with the help of a suitable block diagram.   5

(e) What is a Stream socket ? How is it different from a Datagram socket ?   5

(f) What is a literal in Java ? How many types of literals are there in Java ?   5

(g) Explain, how threads are created by implementing Runnable Interface. What is Thread priority ?   5

(h) Briefly discuss the term 'Garbage collection'. Give the advantages and disadvantages of Garbage collection.   5

2. (a) Explain function overloading with the help of an example code in Java.   5

(b) Explain dynamic building. Also give advantages of dynamic binding.   5

(c) Why main method in Java is static ? Justify your answer.   5

(d) Compare StringBuffer object with String object. When should StringBuffer object be preferred over string object ? 5

3. (a) Explain each component of the statement given below :

'public static void main (string args[ ])'.

Do we use this statement, while writing code for Applet or Servlet. Justify your answer. 8

(b) What is a classpath ? Explain the utility of classpath with suitable example. 5

(c) Explain the Java RMI architecture with the help of a diagram. 7

4. (a) Write a Java program that reads the content of a text file and counts the number of white spaces, number of characters, number of words, and number of full stops in the content. Support your code with comments, to describe your logic. 10

(b) What is Multithreading ? How does process differ from thread ? Explain the steps for creating thread in Java. Also explain the predefined thread priorities in Java.   10

5. Write short notes on the following :   4×5=20

(a) Transient and volatile modifiers

(b) Object serialization

(c) Exception handling

(d) Abstract class

(e) Exception handling in Java