

Roll No.....

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**10511**

**MCA/M-18**  
**PROGRAMMING IN JAVA**  
Paper: MCA-14-41

Time: Three Hours

Maximum Marks: 80

Note: Attempt five questions including No. 1 which is compulsory. All questions carry equal marks.

**Compulsory Question**

1. (a) What do you mean by method overriding?
- (b) What is the use of finally keyword?
- (c) Comment on the need of synchronization in multithreading.
- (d) Describe the purpose of JFrame class.
- (e) How a session is created in a servlet?
- (f) Discuss significance of byte code in Java.
- (g) Explain applet life cycle in brief.
- (h) What is the difference between string and string Buffer class?

**UNIT-I**

2. (a) Write and explain the purpose of various access specifiers available in java.
- (b) Write a program in Java that accept an array using command-line arguments and display the array after sorting.
3. (a) How can you create a user defined package in Java? Explain using suitable example.
- (b) Write a short note on Wrapper class.

## UNIT-II

4. (a) How can you implement multiple inheritance in Java? Explain.  
(b) What is the need of creating user-defined exception using suitable example.
5. (a) How can you handle multiple catch statements with single try block? What will happen, if an exception is not caught by a catch block?  
(b) Explain the following thread methods :
  - (i) Sleep()
  - (ii) Start()
  - (iii) Join()
  - (iv) Wait()

## UNIT-III

6. (a) Discuss any four classes in the event delegation model in detail.  
(b) How can you draw graphics such as circle, line and rectangle in Java? Explain.
7. (a) What are the various methods in Applet class?  
(b) Write a program in Java to convert contents of a file from lowercase to uppercase and write in to another file.

## UNIT-IV

8. Write a program in Java for showing the use of scroll bars for controlling colours on the applet window.
9. How can you create and use menus in Java? Write a program for creating and using menus using Java swings.