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Third Semester MCA Degree Examination, June/July 2014
Programming with Java

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions.

- 1 a. Explain the object oriented principles of Java. (06 Marks)
 b. Write a Java program to produce the following data and display in different-sized 2D array.
- | | | | |
|---|---|---|---|
| 0 | | | |
| 1 | 2 | | |
| 3 | 4 | 5 | |
| 6 | 7 | 8 | 9 |
- (08 Marks)
- c. With an example explain automatic type promotion and type promotion rules in Java. (06 Marks)
- 2 a. Explain classes, objects and constructors in Java with an example. (08 Marks)
 b. Write a Java program to implement a simple stack of 10 integers. (06 Marks)
 c. Discuss final, finally and finalize() in Java (06 Marks)
- 3 a. Explain the multiple usage of the keyword “super” in Java with illustrations. (10 Marks)
 b. Briefly describe (i) Nested exception handling and (ii) user defined exceptions in Java with example each. (10 Marks)
- 4 a. How to create a thread by implementing ‘runnable’ interface? Explain. (10 Marks)
 b. Write a Java program to demonstrate producer-consumer pattern using synchronized threads. (10 Marks)
- 5 a. Explain Generics in Java with an example. (10 Marks)
 b. What is Autoboxing / Unboxing in arithmetic expressions? Explain with example. (10 Marks)
- 6 a. Discuss the process of Applet initialization and termination with a sample code. (10 Marks)
 b. Demonstrate MouseEvents and KeyBoardEvents using a Java Applet program. (10 Marks)
- 7 a. Write a Java program which uses Datagram socket to demonstrate client-server communication. (10 Marks)
 b. Explain the following methods:
 (i) getInetAddress() (ii) getPort() (iii) getLocalPort() (03 Marks)
 c. Write a Java program to create an applet that sets background and foreground color to display a string. (07 Marks)
- 8 Write short notes on :
 a. Byte code and JVM
 b. Method overriding
 c. Dynamic Method Dispatch
 d. Abstract classes (20 Marks)

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