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**Third Semester MCA Degree Examination, June/July 2017**  
**Programming Using Java**

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions.**

- 1
  - a. Explain the three key attributes of object oriented principles. (06 Marks)
  - b. Write a short note on: i) JVM ii) JDK. (04 Marks)
  - c. What are the primitive data types available in Java? (04 Marks)
  - d. What is type casting? Explain automatic type promotion in expressions with rules and demo program. (06 Marks)
  
- 2
  - a. Explain the different types of iteration statements and jump statements with example. (10 Marks)
  - b. Explain the concept of default constructor and a parameterized constructor with an example. (06 Marks)
  - c. Explain the use of 'this' keyword with example. (04 Marks)
  
- 3
  - a. Write a Java program to find the sum of array elements by using 'Enhanced for loop'. (04 Marks)
  - b. Explain the operations of left shift and right shift operators with example. (06 Marks)
  - c. Define a string. Explain any five methods present in a string class to compare strings. (10 Marks)
  
- 4
  - a. Explain method overloading and constructor overloading with suitable example. (10 Marks)
  - b. What is dynamic method dispatch? (04 Marks)
  - c. Explain the following: i) Varargs; ii) Final keyword. (06 Marks)
  
- 5
  - a. What are interfaces? What are their benefits? How to implement multiple interfaces in Java? (08 Marks)
  - b. Define a package. Explain the creation of a package using a suitable example. (08 Marks)
  - c. Explain about four types of access specifiers in Java. (04 Marks)
  
- 6
  - a. What is an exception? Explain exception handling mechanism with proper example. (05 Marks)
  - b. How to define multiple catch blocks? (05 Marks)
  - c. What is synchronization? Explain how inter thread communication can be achieved in multithreading using producer and consumer problem. (10 Marks)
  
- 7
  - a. Explain the following: i) Values( ) and valueof( ) methods; ii) Autoboxing and Autounboxing. (08 Marks)
  - b. What are generics? What is the importance of generics? Explain with example and give general form. (07 Marks)
  - c. What are applets? Give the complete applet skeleton. (05 Marks)
  
- 8
  - Write a short note on:
    - a. Event delegation model
    - b. Two key features of swings
    - c. URL connection class
    - d. Linked list class. (20 Marks)

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