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13MCA32

Third Semester MCA Degree Examination, Dec.2016/Jan.2017
Programming Using JAVA

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions.

- 1 a. Discuss the various primitive data types used in JAVA. Give suitable example. (08 Marks)
 b. Explain implicit and explicit type conversion. Give suitable example. (06 Marks)
 c. Evaluate the following expression where a = 5, b = 10 and c = 6
 i) $a + b - c * b / a - c + a - b$
 ii) $((a - b) * c) > (c - a * b) \ || \ (b + c * a) < (b / a + c)$
 iii) $(a - b) * c + c * b - a + 15 * (4 - c) / 3$ (06 Marks)
- 2 a. Write a JAVA program to evaluate the following
 $1^2/3! + 2^3/4! + 3^4/5! + \dots + n^{n+1}/(n+2)!$ (10 Marks)
 b. What is a class? Give the general form of a class. (05 Marks)
 c. Explain the following with suitable example
 i) new operator ii) this keyword. (05 Marks)
- 3 a. Write a JAVA program to find the sum and average of even numbers in a given matrix. Print the result with the suitable heading along with the given matrix in the matrix form. (08 Marks)
 b. Write a JAVA program to find the sum and average of the element i.e {8, 6, 4, 2, 1, 3, 17, 18, 15} using enhanced for loop. (06 Marks)
 c. Explain any three functions that operate on string. (06 Marks)
- 4 a. Explain method overloading and method overriding. Give suitable example. (08 Marks)
 b. Explain the following : i) super ii) final (06 Marks)
 c. What is abstract class? Illustrate with a programming example. (06 Marks)
- 5 a. What are interfaces? What are their benefits? Explain how it is implemented in JAVA with a suitable example. (10 Marks)
 b. Explain different access specifiers used in JAVA. Give suitable example. (10 Marks)
- 6 a. What is multithreading? Write a JAVA program to create multiple threads in JAVA by implementing runnable interface. (08 Marks)
 b. With a suitable programming example explain inter-thread communication. (06 Marks)
 c. What is an exception? How exceptions can be handled in JAVA? (06 Marks)
- 7 a. What is autoboxing? Illustrate with a programming example. (06 Marks)
 b. What is meant by generic class? Illustrate with a programming example. (06 Marks)
 c. What is an applet? With the help of a skeleton, explain the life cycle of an applet. (08 Marks)
- 8 a. Write a JAVA swing program to create a frame which contains 2 buttons named "Alpha" and "Beta". When either of button is pressed, it should display "Alpha is pressed" and "Beta is pressed". (10 Marks)
 b. Write a JAVA program which demonstrates utilities of linked list class. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
 2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.