M.Sc. (Informatics) - II Semester - 2015

IT-24 Programming Languages

Time: 3 Hrs. Max. Marks: 75

Note: Q1 is Compulsory.

Attempt any 4 questions from Q2 to Q6.

(3+3+3+3+3)

Which one of the following array declaration statements is not legal? Select the one correct answer.

```
(a) int[] i[] = { { 1, 2}, { 1}, {}, { 1, 2, 3 } };

(b) int i[] = new int[2] { 1, 2};

(c) int i[][] = new int[][] { { 1, 2, 3}, { 4, 5, 6} };

(d) int i[][] = { { 1, 2}, new int[ 2 ] };

(e) int i[4] = { 1, 2, 3, 4 };
```

II. Which method declarations are valid declarations:

```
Select the three correct answers.

(a) void compute(int... is) {}

(b) void compute(int is...) {}

(c) void compute(int... is, int i, String... ss) {}

(b) void compute(String... ds) {}

(e) void compute(String... ss, int len) {}

(f) void compute(char[] ca, int... is) {}
```

What will be written to the standard output when the following program is run?

```
public class Qd803 {
    public static void main(String[] args) {
        String word = "restructure";
        System.out.println(word.substring(2, 3));
    }
}
```

What will be the result of attempting to run the following program?

Select the one correct answer.

(a) The program will terminate with an ArrayIndexOutOfBoundsException.

(b) The program will terminate with a NullPointerException.

- (c) 4 will be written to standard output.
- (d) 6 will be written to standard output.

Which operators will always evaluate all the operands? Select the two correct answers.

(a) ||

.(b)+

(c) && (d)?:

.60%

2

(5+4+4+2)

1. Write the usage of instanceof operator? Provide the output of following program?

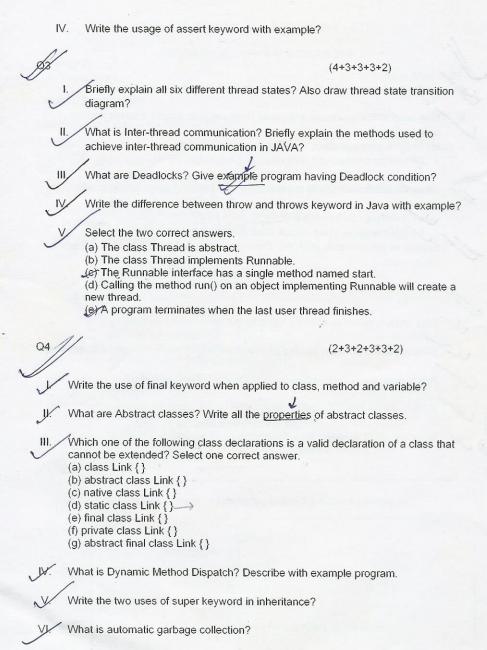
```
class Light { /* ... */ }
class LightBulb extends Light { /* ... */ }
class SpotLightBulb extends LightBulb { /* ... */ }
class TubeLight extends Light { /* ... */ }
class NeonLight extends TubeLight { /* ... */ }
public class WhoAml {
      public static void main(String[] args) {
              boolean result1, result2, result3, result4, result5;
              Light light1 = new LightBulb();
              result2 = light1 instanceof TubeLight:
              result3 = light1 instanceof SpotLightBulb;
              light1 = new NeonLight();
              result4=light1 instanceof TubeLight;
              System.out.println(result2 + " " + result3 + " " +result4);
```

11. Briefly describe various streams used for I/O in JAVA? Explain following snippet of code:

BufferedReader br = new BufferedReader(new InputStreamReader(System.in));

What is static import in java? Given the following code. Which statements, when III. inserted at (1), will result in a program that prints 7, when compiled and run?

```
// (1) INSERT ONE IMPORT STATEMENT HERE
public class RQ700_20 {
      public static void main(String[] args) {
            System.out.println(sqrt(49));
```



J.

(2+3+5+5)

Briefly describe why JAVA is architecture neutral programming language?

II. How no-modifier, protected and public class member access modifier provide access control:

- In same package class, sub-class and non-subclass.
- Different package class, sub-class and non-subclass.

What are interfaces? Briefly provide answer of following question along with example:

Interface can be nested or not?

Advantage of using default static method in interface?

Explain all the principals of OOP? Describe with example how all the OOP works together?

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(2+3+5+2+3)

/ Why JAVA is called as strongly typed language?

What are the restrictions applied to static methods? What is the use of static block?

1. Briefly describe Automatic Resource Management with example?

WAP to iterate three dimension array using for each loop?

What are JAVA Applets? How Applets supports security in JAVA?