



EASTERN UNIVERSITY, SRI LANKA
DEPARTMENT OF MATHEMATICS
THIRD YEAR SECOND SEMESTER (OCT., 2017) - 2013/2014
OC 306 – FUNDAMENTAL OF JAVA PROGRAMMING
SPECIAL REPEAT

Answer All questions

Time allowed: Two Hours

Q1)

1. What is programming Language?
2. Write down the basic structure of a java program using a simple example.
3. Distinguish the difference between the following terms:
 - a. **High-level** language and **Low-level** language;
 - b. **System.out.print()** and **System.out.println()**;
 - c. **Syntax error** and **Runtime error**;
 - d. **Java Virtual Machine (JVM)** and **Compiler**.
4. Give Java statements that accomplish each of the following tasks:
 - a. Declare a double variable *dob*.
 - b. Prompt the user to enter a double value.
 - c. Read a double value from the user and store it in the variable *dob*.
 - d. Display the variable and a message saying whether the number is positive, negative, or zero.

Q2)

1. Find the output of the following Java code fragment:

```
System.out.println (13 / 2 + 5.5);
System.out.println(15.6 / 3.0 + 5 * 1.1);
System.out.println( 14 / 2 + 5 / 2.0 );
System.out.println(4 * 3 + 7 / 5 - 25.5).
```
2. Convert the following code fragment into **while loop** and **do-while loop** and find the **output** for the code:

```
int j = 12;
for (i = 1; i <= 5; i++){
    System.out.print (i+ "\t");
    j = j + 5;
    System.out.println (j);
}
```

3. Find the output of following code fragment:

```
for (int i=1 ; i<=5; i++){
    for( int j=1; j<= 5; j++){
        System.out.print (*');
    }
    System.out.println();
}
```

4. Compare the statements: **break** and **continue** in Java.

Q3)

1. Briefly explain the fundamental principles of Object Oriented Programming(OOP).
2. Distinguish the difference between **Object** and **Class** in Java.
3. Define the following terms related with variables:
 - a. Local variable;
 - b. Instance variable;
 - c. Class variable.
4. Briefly explain the difference between **default constructor** and **parameterized constructor**.

Q4)

1. Discuss the difference between method **Overriding** and **Overloading** in Java.
2. List the **access modifiers** in Java programming.
3. Write a Java program to do the following tasks:
 - a. Define a class **Publication** which has attributes **title** and **price**, functions: **getData()** and **print()**.
 - b. Derive the following sub classes from the Publication class:
 - i. A sub-class **Book** which has an attribute: **ISBN_No** and functions: **getData()** and **print()**.
 - ii. A sub-class **Magazine** which has an attribute: **Volume_No** and functions: **getData()** and **print()**.
 - iii. With the **Magazine** sub-class as base class, derive another sub-class **Journal** which has an attribute: **JournalName** and Functions: **getData()** and **print()**.
 - iv. In **main ()** create an object of the class **Journal**. Invoke the **getData()** and **print()** functions for this object.