2013

INTRODUCTION TO JAVA PROGRAMMING

Time Allotted : 3 Hours *Full Marks :* 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following : $10 \times 1 = 10$

i) What is byte code in the context of Java ?

a) The type of code generated by a Java compiler

b) The type of code generated by a Java Virtual Machine

c) It is another name for a Java source file

d) It is the code written within the instance methods of a class.

ii) Consider

```
public class MyClass {
public MyClass() {/*code*/}
//more code...
}
```

To instantiate MyClass, you would write ?

a) MyClass mc = new MyClass()'

b) MeClass mc = MyClass();

c) MyClass mc = MyClass;

d) MyClass mc = new MyClass.

iii) What is different between a Java applet and a Java application ?

a) An application can in general be trusted whereas an applet can't

b) An applet must be executed in a browser environment

c) An applet is not able to access the files of the compute it runs on

d) all of these..

iv) A constructor

a) must have the same name as the class it is declared within

b) is used to create objects

c) may be declared private

d) all of these.

v) What is the numerical range of char ?

a) 0 to 32767 b) 0 to 65535

c) – 256 to 255 d) – 32768 to 3276.

vi) Which one of the following will declare an array and initialize it with five numbers ?

a) Array a = new Array (5)

b) int [] = new int [5]

c) int a [] = new [5]

d) int [5] array.

vii) Which is true about an anonymous inner class ?

a) can extend exactly one class and implement exactly one interface

b) it can extend exactly one class and can implement multiple interface

c) It can extend exactly one class one class or

implement exactly one interface

d) It can implement multiple interfaces regardless of

whether it also extends a class.

viii) What is an example of polymorphism ?

a) Inner class b) Anonymous classes

c) Method overloading d) Method overriding.

ix) Method overloading occurs only when

a) The name and the type signature of two methods

are not identical

b) The name and the type signature of two methods

are identical

c) The name and the return types of two methods are

identical

d) Only the names are identical.

x) Exception is defined in which package ?

a) java.util b) java.lang

c) java.awt d) java.io.

xi) JVM stands for

a) Java Virtual Machine b) Java Visual Machine

c) Java Vision Machine d) None of these.

xii) What do the 'public' and 'private' keywords related to ?

a) Typing b) Polymorphism

c) Garbage collection d) Access restriction.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

2. What do you mean by object oriented programming ? How it

differs from conventional procedural oriented programming ?

3. a) What is byte-code ?

b) What does the JVM do ?

c) Why Java is called platform independent language ?

1 + 1 + 3

4. Explain different *access specifiers* in Java. 5

5. What is the difference between method overloading and method overriding ? Explain with example. 5

6. a) Explain all the keywords briefly in "public static void main (string args [])".

b) What is wrapper class ? 3 + 2

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. 3 × 15 = 45

7. a) Discuss applet life-cycle indicating the functions, which are used.

b) Why Java is called compiler-interpret language ?

c) Describe different forms of inheritance with example.

7 + 3 + 5

8. a) What are exceptions ? Explain the user defined exceptions and system defined exceptions with suitable example.

b) How do we define try and catch block ?

c) What is the utility of finally block ?

d) Discuss compile-time errors and run-time errors with example ? (2 + 5) + 2 + 3 + 3

9. a) Describe the complete life cycle of a thread. What is synchronization ? When is it used ?

b) How do we set priories for threads ?

c) Write a program that uses the thread methods yield ( ),

stop ( ) and sleep (). (4 + 2 + 3) + 2 + 4

10. a) What is constructor ? What does the finalize ( ) method do ?

b) What are packages and what they used for ?

c) What is an interface ? Implement interface in Java with a simple code. (2 + 2) + 3 (3 + 5)

11. a) What is class ? How it accomplish data hiding ?

b) When we declare a method or class as final ?

c) When do we declare a member of a class static ?

d) How does string class differ from the StringBuffer class ?

e) What is vector ? What are the advantages using vector over array ? 3 + 2 + 2 + 3 + 2 + 3