

[Full Marks : 70

$$10 \times 1 = 10$$

<http://www.makaut.com>



iii) What will happen if you compile / run this code ?

```
public class Q1 extends Thread
{
    public void run ()
    {
        System.out.println ( "Before start method" );
        this.stop ();
        System.out.println ( "After stop method" );
    }

    public static void main ( String [ ] args )
    {
        Q1 a = new Q1 ();
        a.start ();
    }
}
```

- a) Compilation error at line 7
- b) Runtime exception at line 7
- c) Prints "Before start method" and "After stop method".
- d) Prints "Before start method" only.

iv) Which one of the following is a valid declaration of an Applet ?

- a) Public class MyApplet extends java.applet.Applet {
- b) Public Applet MyApplet {
- c) Public class MyApplet extends applet implements Runnable {
- d) Abstract class MyApplet extends java.applet.Applet {
- e) Class MyApplet implements Applet {

6841 (15/06)



v) What is the range of the char type ?

- a) 0 to 2^{16}
c) 0 to $2^{16} - 1$

vi) Aggregation (encapsulation) relationships are represented in the UML notation by

- nesting of classes
- lines with a solid diamond at one end
- lines with a hollow diamond at one end
- lines with an arrow at one end
- lines without an arrow at either end.

11

vii) A sequence diagram is

- a) a time-line illustrating a typical sequence of calls between object function members
- b) a call tree illustrating all possible sequences of calls between class function members
- c) a time-line illustrating the changes in inheritance and instantaneous relationships between classes and objects over time
- d) a tree illustrating inheritance and relationships between classes
- e) a directed cyclic graph illustrating inheritance and instantaneous relationships between classes and objects.

11

viii) Which of the following are true ?

- The `InputStream` and `OutputStream` classes are Byte-oriented.
- The `ObjectInputStream` and `ObjectOutputStream` do not support serialized object input and output.
- The `Reader` and `Writer` classes are Character-oriented.
- The `Reader` and `Writer` classes are the preferred solution to serialized object output.

6841 (15/06)



ix) What is an example of polymorphism ?

- | | |
|-----------------------|-----------------------|
| a) Inner class | b) Anonymous classes |
| c) Method overloading | d) Method overriding. |

x) Exception is defined in which package ?

- a) java.util b) java.lang
- c) java.awt d) java.io.

11

xi) The relation between classes can be represented by

- a) polymorphism b) method
c) message d) inheritance.

11

```

xii) switch ( i ) {

```

default:

```
System.out.println ( "Hello" );
```

}

What is the acceptable type (s) for the variable i ?

- a) int b) double
c) object d) byte.

11/11/2016

xiii) The import statement is always

- a) the first non-comment statement in a java program file
- b) the default non-comment statement in java program file
- c) a non-comment statement and can be defined anywhere in the program
- d) none of these.

10/10

6841 (15/06)



xiv) Method overloading occurs only when

- a) the names and the type signature of two methods are not identical
- b) the names and the type signature of two methods are identical
- c) the names and the return types of two methods are identical
- d) only the names are identical.

xv) An Actor is someone or something

- a) that must interact with the system
- b) that always external to the system
- c) that are not part of the system
- d) all of these.

GROUP - B

(Short Answer Type Questions)

Answer any *three* of the following.

3 × 5 = 15

2. What is byte code ? What does the JVM do ? Why is Java called compiler-interpret language ? 2 + 3
3. Discuss Applet life-cycle indicating the functions. 5
4. a) What is an Actor ?
b) Describe the Metaclass. Is it different from Metadata ? 2 + 3
5. What is the base class of Error and Exception ? Differentiate between throw and throws. 1 + 4
6. a) What is Late binding ?
b) Describe major and minor elements of Object Oriented Analysis. 1 + 4
7. a) Write down the similarities and differences between interfaces and classes.
b) Discuss the various levels of access protection available for package and their implementation. 2 + 3

6841 (15/06)

**GROUP - C****(Long Answer Type Questions)**

Answer any three questions.

 $3 \times 15 = 45$

8. What are the primary goals of UML ? What is the difference between state chart diagram and activity diagram ? Model an activity diagram for the usecase of a driver starting a car. Explain the sequence diagram and collaboration diagram with an example used in UML.

 $5 + 5 + 5$

9. a) What are Java "thread" and "monitor" ?
 b) Distinguish between "dynamic binding" and "Message passing"
 c) What is "Template" and "Package" with example.

 $5 + 5 + 5$

10. a) What is meant by aggregation ? And explain the different types of aggregation.
 b) What are the differences between a sequence diagram and a collaboration diagram ?
 c) Draw a sequence diagram for the cellular phone connection.
 d) Draw object diagram for the following object classes, with association names attributes and additional object classes if required.

Object classes : college, playground, principal, classroom, board, book, student, faculty, cafeteria, ruler, door, swing.

 $4 + 3 + 3 + 5$

11. What is multi-threading ? Write a program which can run a main thread and child thread simultaneously. What synchronized keyword does ? Briefly describe with example.

 $2 + 5 + 2 + 6$

12. a) How inheritance is incorporated in Java ? Is it possible in Java to implement multiple inheritance ? If not then how is it possible explain ?
 b) What is an interface ? What are the differences between interface and abstract class ? Give one example in java to implement one interface.

7

8

 END