Name : .....

Roll No. : .....

Invigilator's Signature : .....

CS/B.Tech/(CSE-OLD)/SEM-6/CS-605/2013

2013

OBJECT TECHNOLOGY & UML

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 the following : 10 × 1 = 10

i) Which keyword is used to prevent inheritance ?

a) Final b) Static

c) Super d) None of these.

ii) All classes in JAVA are the sub-class of

a) Final class b) Object class

c) Super class d) Static class.

iii) In Java a thread can be created by

a) extending the thread class

b) implementing runnable interface

c) both (a) & (b)

d) none of these.

iv) From any non-subclass outside the package which access is possible ?

a) Public b) Private

c) Protected d) Default.

v) The concept of multiple inheritance is implemented in java by

a) extending two or more classes

b) implementing two or more interfaces

c) extending one class and implementing two or more classes

d) all of these.

vi) In Java, Applet is a/an

a) super class b) interface

c) package d) object.

vii) The default priority of a thread is

a) 1 b) 10

c) 0 d) 5.

viii) Exception is defined in ..... package.

a) Java.lang b) Java.awt

c) Java.io d) Java.util.

ix) In which class wait () method is defined ?

a) Applet b) Runnable

c) Thread d) Object.

x) Which of the following statements about array is syntactically wrong ?

a) person p[]=new person[5]

b) person[5] p;

c) person[] p[];

d) person p[][]=new person [2][];

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. 3 × 5 = 15

2. a) What is an object ? How is it related to class ?

   b) What is the difference between object and object reference ? 3 + 2

3. a) Explain "public static void main (string args[])" in brief.

   b) What is the difference between StringBuffer and StringBuilder ? 3 + 2

4. a) Why are constructors needed in JAVA ?

   b) Differentiate between Link and Association.

   c) How does abstract class differ from interface ?

   2 + 1 + 2

5. a) What are the goals of UML ?

   b) Write down the difference between guards and triggers in an activity diagram. 3 + 2

6. What is Dynamic method dispatch ? Discuss with an example.

GROUP – C

(Long Answer Type Questions)

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

7. a) Write down the difference between procedural oriented programming and object oriented programming ?

   b) Can a constructor be overloaded ? Explain with an example.

   c) Explain static keyword. 5 + 4 + 6

8. a) Write down the difference between method overloading and method overriding.

   b) What is interface ? How can Multiple inheritance be implemented by interface ?

   c) Explain the system defined exception and user defined exception with suitable example. 5 + 4 + 6

9. a) What is an applet ? Explain the state transition diagram of applet in Java.

   b) Write down the difference between Applet and Application Program.

   c) What is the use of this keyword and final keyword ?

   d) How can a thread be created in Java ? 6 + 2 + 4 + 3

10. a) Why is UML called a modelling language ?

    b) Write down the difference between 'extends' and 'includes' in context of use case diagram.

    c) What are the different types of messages used in sequence diagram ?

    d) Draw a sequence diagram for the situation when a teacher views grades of a student. You must include objects, different messages, alternative workflows, branching suitably in the diagram. 2 + 3 + 4 + 6

11. Write short notes on any *three* of the following : 3 × 5

    a) Class relationship

    b) Vector

    c) Inner class

    d) Thread scheduling

    e) Sequence diagram.