Name : .....

Roll No. : .....

Invigilator's Signature : .....

CS/B.TECH(CSE)/SEM-6/CS-605/2010

2010

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 : $10 \times 1 = 10$

i) What is the illegal identifier ?

a) int :a; b) in_b;

c) int $c; d) int calc_data;

ii) Which is not a JAVA keyword ?

a) strctfp b) synchronized

c) transient d) all of these.

iii) Which will be compilable abstract class ?

a) public abstract class Car { public Bark speak ( ); }

b) public abstract class Car { public Bark speak ( ) { } }

c) public class Car { public abstract Bark speak ( ): }

d) public class Car abstract { public abstract Bark speak ( ); }

iv) Which is true ?

a) "X extends Y" is correct if an only if X is a class and Y is an interface.

b) "X extends Y" is correct if an only if X is an interface and Y is a class.

c) "X extends Y" is correct if X and Y are either both classes and both interfaces.

d) "X extends Y" is correct for all combinations of X and Y being classes and / or interfaces.

v) Which is legal declaration ?

a) short x [ ]; b) short [ ] y;

c) short [ ] z [ ] [ ]; d) All of these.

vi) From any non-sub-class class outside the package, which access is possible ?

a) Public b) Protected

c) Default d) All of these.

vii) Which is a primitive type variable declarations ?

a) char b) byte

c) double d) All of these.

viii) Which is the exact waterfall of any software development process ?

a) What — How — Do it — Use — Test

b) How — What — Do it — Test — Use

c) What — How — Do it — Test — Use

d) How — What — Do it — Use — Test.

ix) Using class declaration, the "final" key-word means

a) the methods in that class will be overridden

b) the class can't be sub-classed

c) the class would be a super class

d) all of these.

x) In JAVA, Applet is a

a) Super Class b) Interface

c) Package d) Object.

GROUP – B

(Short Answer Type Questions)

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

2. Explain different *access specifiers* in Java.
3. Explain the *static* keyword with a suitable Java code.
4. a) What do you mean by *final, finalize* and *finally* ?

   b) What do you mean by *garbage collection* in Java ? 3 + 2
5. Explain *Inner class* in Java with a simple code.
6. Explain the advantage of *multitthread* over *single thread.*

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

7. a) Explain "Use Case" diagram. What are the essential criteria for ideal use case diagram ? What are the "extends" and "includes" constructs in use case diagram ? Draw a use case diagram Nursing Home functionality where example of actors are Patient, Doctor, Reception Staff, Billing Staff and Administractor etc. 1 + 2 + 2 + 5

   b) Explain State chart and Activity diagram with example. 5

8. a) What are local applet and remote applet ?
   b) What is the difference between Java applets and Java application programs ?
   c) Write a applet program to draw a polygon filling with green colour using rgb format.
   d) What is package ? How do we add a class or an interface to a package ?
   e) What do you mean by CLASSPATH ? 2 + 3 + 4 + 4 + 2

9. a) What are exceptions ? Explain the user defined exceptions and system defined exceptions with suitable examples.
   b) How do we define try and catch block ? Is it essential to catch all types of exceptions ? Explain.
   c) Briefly explain the use of "this" and "super" keywords ? (2 + 6) + 3 + 4

10. a) What do you mean by link and association ? Explain their difference.
    b) What are the differences between a class diagram and an object diagram ? How do you indicate public, protected and private members of a class in a class diagram ?
    c) Describe the Component diagram and Deployment diagram. Draw Component and Deployment diagram of the student information system. 3 + 5 + 7

11. a) Explain the difference between method overloading and method overriding. What restrictions are placed on method overloading and method overriding ?
    b) What is multithreading programming ? Explain thread life cycle.
    c) Explain the difference between creating a thread by extending the Tread class and creating a thread by implementing the Runnable interface with suitable programs ? 6 + 4 + 5