

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 (); } |

6401

[ Turn over

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

- iv) Which is true ?
- a) "X extends Y" is correct if and only if X is a class and Y is an interface.
  - b) "X extends Y" is correct if and 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.

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

- ix) Using class declaration, the "final" key-word means
- the methods in that class will be overridden
  - the class can't be sub-classed
  - the class would be a super class
  - all of these.
- x) In JAVA, Applet is a
- Super Class
  - Interface
  - Package
  - Object.

**GROUP - B****( Short Answer Type Questions )**Answer any *three* of the following.  $3 \times 5 = 15$ 

- Explain different *access specifiers* in Java.
- Explain the *static* keyword with a suitable Java code.
- What do you mean by *final*, *finalize* and *finally* ?
  - What do you mean by *garbage collection* in Java ?  $3 + 2$
- Explain *Inner class* in Java with a simple code.
- Explain the advantage of *multithread* over *single thread*.

**GROUP - C****( Long Answer Type Questions )**Answer any *three* of the following.  $3 \times 15 = 45$ 

- 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 Administrator etc.  $1 + 2 + 2 + 5$
  - Explain State chart and Activity diagram with example. 5

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

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 Thread class and creating a thread by implementing the Runnable interface with suitable programs ?  $6 + 4 + 5$