

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 × 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.

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- 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 ? $6 + 4 + 5$