



Name :

Roll No. :

Invigilator's Signature :

**CS/M.Tech (IT)/SEM-2/MSE-203/2010
2010**

OBJECT ORIENTED SOFTWARE ENGINEERING & 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.*

Answer any *five* questions.

5 × 14 = 70

1. a) Prove by a suitable code snippet that Dynamic Method
Dispatch in Java is Run time and not Compile time. 5
- b) What are the differences between method overloading
and method overriding ? 4
- c) Mention the conditions of method overriding in
Java SE 1.4. 4
- d) What addition is made to the above condition list in
Java SE 1.5 ? 1



2. a) Differentiate between abstract class and interfaces. 3
- b) Write a note on the 'Significance of abstract methods and abstract classes'. 3
- c) State with suitable code snippet the rules of type casting in Java SE 1.4 in case of Binary and Unary operators for primitive data types. 2×4
3. a) What do you mean by checked and unchecked exceptions ? State with suitable examples. $2 + 2$
- b) How can you create your custom exception ? 4
- c) Draw a Control Flow Graph (CFG) showing the execution of try-catch-finally blocks. 3
- d) Can a try block have no catch block ? 1
- e) If yes, justify whether it is rational to code it. 1
- f) What is a throwable ? 1
4. a) Differentiate between definition of array in Turbo C++, and Java SE 1.4. 2
- b) How does Java SE 1.5 improve on it ? 2
- c) Name the FQN of the universal super class. 1



d) Describe the following methods of the above class :

3 x 3

- i) Public boolean equals (java.lang.object)
- ii) Public string toString()
- iii) Protected void finalize()

5. a) Why do we use threads ? Why is Java called multithreaded ? 3

b) With suitable code snippets, show how you can synchronize the following : 2 x 5

- i) A block
- ii) A method.

c) When do we use join() ? 1

6. a) Treating a complex number as an entity, write a program to add 2 complex numbers and show the result accordingly. 7

b) When do you use wait() and notify() ? Show via an example. 7

7. a) Write a technical article 'cloning of objects' accompanied by suitable codes. 8

b) Write a short note on "object serialization". 6
