



Name :

Roll No. :

Invigilator's Signature :

CS/B.Tech/(EE-NEW)/SEM-6/EE-604C/2013

2013

OBJECT ORIENTED PROGRAMMING

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)

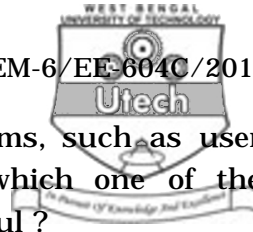
1. Choose the correct alternatives for any *ten* of the following :
 $10 \times 1 = 10$
 - i) Which mechanism is known as runtime polymorphism ?
 - a) Encapsulation
 - b) Method overloading
 - c) Method overriding
 - d) Inheritance.
 - ii) Which is a primitive type variable declaration ?
 - a) char
 - b) byte
 - c) double
 - d) All of these.
 - iii) Which statement is false ?
 - a) A final class can be inherited
 - b) Objects cannot be created from an abstract class
 - c) Abstract methods end in a semicolon-no curly braces
 - d) all of these statements are not true.



- iv) After the following code fragment what will be the value of i ?

```
String s;  
int i;  
s="It is the time to take decision."  
i=s.indexOf('t')
```

- a) 1 b) 2
c) 3 d) 4.
- v) Using class declaration the “final” keyword means
- a) the method in that class will be overridden
b) the class can't be sub-classed
c) the class would be a super class
d) none of these.
- vi) What is the purpose of class constructor ?
- a) To make objects initially have certain values when they are instantiated
b) To instantiate an object
c) To extend a class
d) To pass values for methods for a class.
- vii) Exception is defined in which package ?
- a) java.util b) java.lang
c) java.awt d) java.io
- viii) The relation between classes can be represented by
- a) polymorphism b) encapsulation
c) inheritance d) interface.
- ix) For showing scenarios, which one of the following OOAD artifacts is the most useful ?
- a) interaction diagrams b) activity diagrams
c) use cases d) state diagrams.



- x) For understanding control mechanisms, such as user interfaces and device controllers, which one of the following OOAD artifacts is most useful ?
- a) interaction diagrams b) activity diagrams
c) use cases d) state diagrams.
- xi) Which of the following assignments are valid ?
- a) float x = 123.5 b) int x = 5.60
c) double y = 0 × 756 d) int z = (int) false.
- xii) We would like to make a member of a class visible in all subclasses regardless of what package they are in. Which one of the following keywords would achieve this ?
- a) Private b) Private protected
c) Protected d) Public.

GROUP - B

(Short Answer Type Questions)

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

2. What is byte-code ? What does the JVM do ? Why java is called compiler-interpreter language ? 1 + 2 + 2
3. What is the difference between default constructor and parameterized constructor ? Explain with example. 3 + 2
4. What are the difference between structured and object oriented programming language ? Describe major and minor elements of Object Oriented Analysis. 3 + 2
5. What is method overloading ? Explain with suitable examples. 2 + 3
6. Discuss Applet life-cycle indicating the functions.



GROUP - C
(Long Answer Type Questions)

Answer any *three* of the following.

$3 \times 15 = 45$

7. a) What is the basic goal of UML ? What do you mean by collaboration diagram ?
b) Why Java is called 'strongly typed' programming language ? What is meta-class ?
c) Explain different access modifiers available in java.
 $(2 + 3) + (4 + 1) + 5$
8. a) Define links. Explain aggregation and generalization.
b) How can two methods have same signature ? Explain method overriding with suitable examples.
c) What is the difference between "==" and ".equals ()" in context of string objects ?
 $(1 + 4) + (1 + 4) + 5$
9. a) How is inheritance incorporated in java ? Is it possible in java to implement multiple inheritances ? If not then how is it possible, explain ?
b) What is an interface ? What are the differences between interface and abstract class ? Give an example in java to implement an interface.
 $7 + 8$
10. What is multi-threading ? Write a program which can run a main thread and child thread simultaneously. What does synchronized keyword do ? Briefly describe with example.
 $2 + 5 + 2 + 6$
11. Write short notes on any *three* of the following : 3×5
a) Late binding and Dynamic binding
b) Object and object references
c) Collaboration diagram and sequence diagram
d) Error and exception
e) JVM.