

Roll No. :

Elective B

Supervisor's Signature :

23/05

CS / BCA / SEM-6 / BCAE-602B / 2011

2011

OBJECT ORIENTED PROGRAMMING WITH JAVA

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)

Choose the correct alternatives for the following : $10 \times 1 = 10$

i) String s = "s" ;

System.out.println (s) ;

The output is

a) s

b) "s"

c) Compile error

d) Run time error.

ii) Consider the following statements :

int a = 3, b = 2 ;

a = (a < b) ? (a + b) : (a - b);

What will be the output of a ?

a) 5

b) - 1

c) 1

d) 3.

- iii) Consider the following statements :
- ```
int a [] = new int [3];
a [3] = 7;
System.out.println (a [3]);
```
- The output is
- a) 3
  - b) 7
  - c) Compile error
  - d) Run time error.
- iv) Consider the following statements :
- ```
String s = "BCAE-602B" ;
System.out.println ( s.charAt (2) );
```
- The output is
- a) C
 - b) A
 - c) Exception occur
 - d) 2.
- v) Which class can not be initialized ?
- a) Abstract
 - b) Public
 - c) Final
 - d) Protected.
- vi) How many catch clauses can try statement have ?
- a) One
 - b) Any number
 - c) Zero
 - d) None of these.
- vii) An exception is
- a) run time error
 - b) compile time error
 - c) machine error
 - d) none of these.
- viii) How many default constructors can a class have, if it has constructor ?
- a) 1
 - b) 0
 - c) 2
 - d) Any number.
- ix) The JVM compiles a java source code to
- a) object code
 - b) executable code
 - c) unicode
 - d) none of these.
- x) JRE stands for
- a) Java Research Engine
 - b) Java Remote Engine
 - c) Java Runtime Environment
 - d) none of these.

GROUP - B

(Short Answer Type Questions)

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

2. Explain method overloading and method overriding with the help of an example.
3. What do you mean by interface ? Write the difference between interface and abstract class.
4. "Objects are passed by reference in java." Explain with example.
5. What is "dynamic method dispatch" ? How is it accomplished ?
6. What is difference between 'default and public' modifier and 'protected and private' access modifier ?

GROUP - C

(Long Answer Type Questions)

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

7.
 - a) What is the significance of final keyword used as a modifier before a variable ? How is it used for a method or a class ? Can an abstract method be declared as final ? $2 + 2 + 1$
 - b) Explain about 'this' keyword. Illustrate with a suitable example. $2 + 2$
 - c) What are the differences between private and static modifiers while used in classes ? 2
 - d) What is the purpose of finalization ? Can we have more than one constructor in a class ? If yes, explain the need of such situation. $2 + 1 + 1$
8.
 - a) What is multithreading ? Is it synonymous with multiprocessing ? $2 + 1$
 - b) What is a thread ? How is it different from a process ? $1 + 2$
 - c) In how many ways a thread can be created ? Illustrate the pros and cons of the different ways of creating a thread. $2 + 2$
 - d) Discuss the following functions with example : 5
 - i) run ()
 - ii) suspend ()
 - iii) setPriorities ()

9. a) What is the purpose of Runnable Interface ?
collection interface ? Illustrate its usage. 2 + 2
- b) What is the difference between String & StringBuffer. 2 + 2
- c) Write a Java program to add two strings using a buffer. 2 + 2
- d) What is a wrapper class ? Illustrate through example. 1. String a wrapper class ? 2 + 2
10. a) Illustrate the use of serialization and deserialization. 3
- b) What is abstract base class ? What is concrete derive class ? Can there be an abstract class with no abstract methods in it ? 1 + 1 + 1
- c) Does Java support static or dynamic binding ? Explain. 2
- d) What is aggregation ? How is aggregation different from association and generalization ? 1 + 2
- e) Write a program in Java that demonstrates a three level inheritance. Use the various access controls for the same. 4
11. a) What is the difference between procedural programming paradigm and object oriented paradigm ? 2
- b) Explain the Java compilation and execution of Java programming steps. 2
- c) What is the role of JVM ? Is JRE different from JVM ? 2 + 2
- d) What do you mean by automatic garbage collection in Java ? 2
- e) What is use of finally clause in exception handling ? When is the finally clause of a try-catch-finally statement executed ? Illustrate through example. 2 + 3

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