CS/BCA/SUPPLE/SEM-6/BCAE-602B/2010

2010

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)

1.   Choose the correct alternatives for the following :

$10 \times 1 = 10$

   i)   JVM stands for

      a)   Java Virtual Machine

      b)   Java Visual Machine

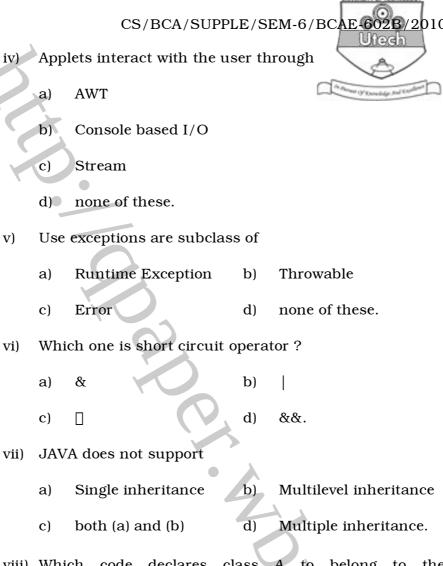   c)   Java Vision Machine

      d)   None of these.

ii)   Which one of the following statements is FALSE ?

a)   Java supports multi-threaded programming

b)   Threads in a single program can have different priorities

c)   Multiple threads can manipulate files and get user input at the same time

d)   Two threads can never act on the same object at the same time

e)   Threads are created and started with different methods.

iii)   Read the following piece of code carefully :

```
if ("String". trim () == "String")

    System.out.println ("Equal") ;

else

    System.out.println ("Not Equal") ;
```

a)   The code will compile and print "Equal"

b)   The code will compile and print "Not Equal"

c)   The code will cause a compiler error

d)   None of these.

iv) Applets interact with the user through

    a)   AWT

    b)   Console based I/O

    c)   Stream

    d)   none of these.

v) Use exceptions are subclass of

    a)   Runtime Exception   b)   Throwable

    c)   Error   d)   none of these.

vi) Which one is short circuit operator ?

    a)   &   b) |

    c)   d)   &&.

vii) JAVA does not support

    a)   Single inheritance   b)   Multilevel inheritance

    c)   both (a) and (b)   d)   Multiple inheritance.

viii) Which code declares class A to belong to the mypackage.financial package ?

    a)   Package mypackage;

    b)   Import mypackage.*;

    c)   Package mypackage.financial;

    d)   Package mypackage.financial.A;

ix) int j;

for(int i=0;i<14;i++) {

if(i<10) {

j = 2 + i;

}

System.out.println("j:" + j + " i: " + i);

}

What is WRONG with the above code ?

a)   Integer "j" is not initialized

b)   Nothing

c)   You cannot declare integer 'i' inside the for-loop declaration

d)   The syntax of the "if" statement is incorrect.

x)   Final keyword can be used for

a)   creating the equivalent of a named constant

b)   preventing overriding

c)   preventing inheritance

d)   all of these.

GROUP – B

(Short Answer Type Questions)

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

2. What is an object oriented paradigm ? Explain two differences between the object oriented paradigm of programming languages and the structured paradigm of programming languages.

3. What is Data Abstraction ? What is Data Encapsulation ? What is the difference between Data Abstraction and Information Hiding ?   1 + 1 + 3

4. What is the purpose of abstract class ? What is the difference between abstract class & interface ?   2 + 3

5. What is JAVA virtual machine ? How is JAVA a platform independent language ?   2 + 3

6. What is 'super' in JAVA ? Explain at least two different uses of 'super' in the JAVA programs, with an example.

7. Discuss the various levels of access protection available for packages and their implications.
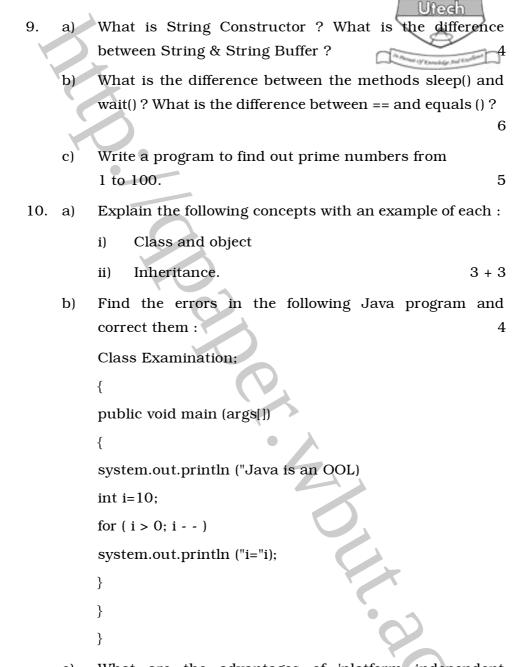
GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following.   3 × 15 = 45

8. Differentiate between Process and Thread. What is synchronization ? When do we use it ? What is Inter-thread communication ? Develop a Java program for the example.

    2 + 2 + 2 + 2 + 7

9. a) What is String Constructor ? What is the difference between String & String Buffer ? 4

b) What is the difference between the methods sleep() and wait() ? What is the difference between == and equals () ?

6

c) Write a program to find out prime numbers from 1 to 100. 5

10. a) Explain the following concepts with an example of each :

i) Class and object

ii) Inheritance. 3 + 3

b) Find the errors in the following Java program and correct them : 4

Class Examination;

{

public void main (args[])

{

system.out.println ("Java is an OOL)

int i=10;

for (i > 0; i - -)

system.out.println ("i="i);

}

}

}

c) What are the advantages of 'platform independent languages'; ? Also explain how Java is platform independent. 5

11. Describe the different stages in the life cycle of an applet. Distinguish between init () and start () methods. What is the difference between checked and unchecked exceptions ? Give an example where interface can be used to support multiple inheritances. Develop a Java program for the example.

4 + 3 + 4 + 4

12. Write short notes on any *three* of the following :   3 × 5

    a)   Runtime polymorphism in Java

    b)   Package

    c)   Final, finally and finalize keywords

    d)   Super and this

    e)   JIT compiler.