

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 )**

1. 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, when 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 ? What is the collection interface ? Illustrate its usage. 2 + 1 + 2
- b) What is the difference between String & StringBuffer ? 3
- c) Write a Java program to add two strings using string buffer. 3
- d) What is a wrapper class ? Illustrate through example. Is 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