

```

        finally
        {
            System.out.print("D");
        }
        System.out.print("E");
    }
    public static void badMethod()
    {
        throw new RuntimeException();
    }
}

```

- (b) What is wrapper class? Differentiate between checked and unchecked exception. What is the use of finally block?

6 + (2 + 2 + 2) = 12

Group – E

8. (a) Draw and explain the applet life cycle.
 (b) What are the major differences between applet and applications in Java?
 (c) Design a simple applet which accepts the name of the user through a text box and displays a greeting message on a message box after clicking on a button.
 (d) What are the advantages of using multithreading?
9. (a) Compare notify, notify all, join with example.
 (b) What is synchronization? Explain with suitable example.

3 + 3 + 4 + 2 = 12

6 + (2 + 4) = 12

OBJECT ORIENTED PROGRAMMING (INFO 2204)

Time Allotted : 3 hrs

Full Marks : 70

Figures out of the right margin indicate full marks.

Candidates are required to answer Group A and any 5 (five) from Group B to E, taking at least one from each group.

Candidates are required to give answer in their own words as far as practicable.

Group – A (Multiple Choice Type Questions)

1. Choose the correct alternative for the following: **10 × 1 = 10**
- (i) The import statement
 (a) must be the first statement of the program
 (b) can be written anywhere in the program
 (c) is the first default statement
 (d) none of the above.
- (ii) Exception is defined in which package?
 (a) java.lang (b) java.util
 (c) java.awt (d) java.io.
- (iii) What is an example of polymorphism?
 (a) Method overloading (b) Method overriding
 (c) Interface (d) None of the above.
- (iv) If an user tries to write Java program and executes it on a computer, then that computer should have
 (a) only JRE
 (b) both JRE and JVM
 (c) only JDK
 (d) both JDK and JRE.
- (v) Inside a method, 'this' keyword refers to
 (a) the caller object which is presently calling the method
 (b) the variables sent to the method
 (c) the class that contains the method
 (d) the method itself.

- (vi) Finally block executes for
 (a) every caught exception (b) every uncaught exception
 (c) both caught and uncaught exception (d) never executes
- (vii) Which of the following is the default parent class of every class in Java?
 (a) Object (b) System
 (c) Super (d) Supreme.
- (viii) In Java, arrays are implemented as
 (a) object references (b) primitive data types
 (c) strings (d) objects.
- (ix) Which is a valid declaration in JAVA?
 (a) `int a = new int(10)` (b) `int a[] = new int[10]`
 (c) `int a[] = new int(10)` (d) none of the above.
- (x) What is the full phrase of AWT?
 (a) Absolute Window Toolkit (b) Abstract Window Toolkit
 (c) Absolute Window Tools (d) Abstract Window Tools.

Group - B

2. (a) What is meta class? Explain with example.
 (b) Is Java a perfectly object oriented programming language? Justify your answer.
 (c) What is polymorphism? How does Java support this feature of OOPs?
 (d) What do you mean by state, behaviour and identity of a class?

$$4 + 3 + 2 + 3 = 12$$

3. (a) "Java is a platform independent language" – justify this statement.
 (b) What is aggregation and association? Using small examples discuss how Java adapts these features.
 (c) How does Java exhibits abstraction? Explain your answer with example.

$$3 + (3 + 3) + 3 = 12$$

Group - C

4. (a) How garbage collector works in Java? What does finalize method do? Can the programmer invoke Java garbage collector according to his requirement? If yes, state how?

- (b) Is there any difference between object and reference in Java? Explain with example.
 (c) What is dynamic binding? Why is it named so? Support your answer with example.

$$(2 + 2 + 1 + 1) + 2 + (2 + 1 + 1) = 12$$

5. (a) What is the purpose of using super keyword?
 (b) What are the differences between abstract class and interface? Can we easily replace abstract class with interface and vice versa? Justify your answer with example.
 (c) What are the properties of static methods which are different from normal methods? What is static block?

$$3 + (3 + 3) + (2 + 1) = 12$$

Group - D

6. (a) Differentiate between Error and Exception. How can you create your own exception? Explain with example.
 (b) Write a program in Java which will copy the content of one file to another file using command line argument.

$$(3 + 3) + 6 = 12$$

7. (a) What will be the output of the following program? Explain.

```
public class X
{
    public static void main(String [] args)
    {
        try
        {
            badMethod();
            System.out.print("A");
        }
        catch (RuntimeException ex)
        {
            System.out.print("B");
        }
        catch (Exception ex1)
        {
            System.out.print("C");
        }
    }
}
```