

# 22412

**23242**

**3 Hours / 70 Marks**

Seat No. 

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- Instructions* – (1) All Questions are *Compulsory*.  
(2) Answer each next main Question on a new page.  
(3) Illustrate your answers with neat sketches wherever necessary.  
(4) Figures to the right indicate full marks.  
(5) Assume suitable data, if necessary.  
(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

- 1. Attempt any FIVE of the following:** **10**
- a) State the significance of Java Virtual Machine (JVM) in the Java programming environment.
  - b) Define array. List its types.
  - c) State use of finalize( ) method with its syntax.
  - d) Define the interface in Java. Write the syntax.
  - e) Define thread. Mention 2 ways to create thread.
  - f) Write syntax of draw Rect( ).
  - g) Give the use of <PARAM> tag in applet.
- 2. Attempt any THREE of the following:** **12**
- a) Explain the concept of platform independence in Java and discuss how it is achieved. Give example to illustrate the concept.
  - b) What happens if you don't define any constructor in a class? Can you still create objects of that class? Explain with example.
  - c) Write a Java program in which thread A will display the even numbers between 1 to 50 and thread B will display the odd numbers between 1 to 50. After 3 iterations thread A should go to sleep for 500 ms.
  - d) Explain multilevel inheritance with example.

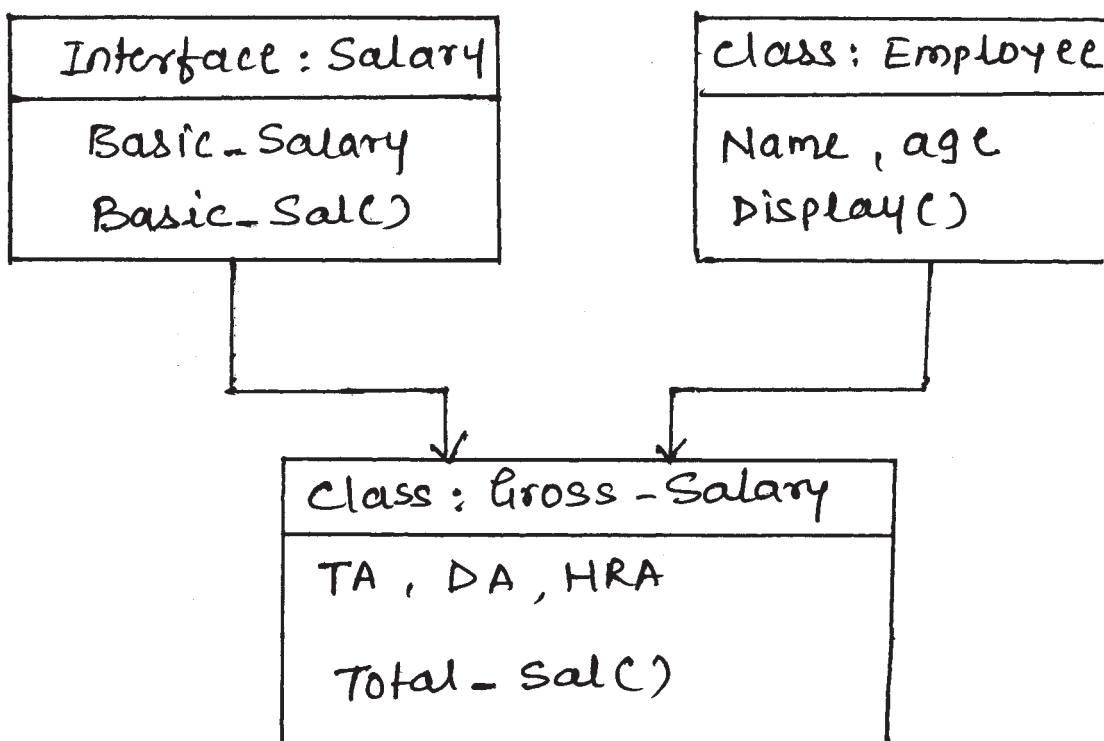
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**3. Attempt any THREE of the following: 12**

- a) Define a class employee with data members 'empid', 'name' and 'salary'. Accept data for three objects and display it.
- b) How can the "super" keyword be used in inheritance? Give an example to demonstrate its usage.
- c) Explain the following with syntax:
  - i) drawLine
  - ii) drawOval
  - iii) drawArc
  - iv) drawString
- d) What is the concept of streams in Java? How do streams facilitate input and output operations?

**4. Attempt any THREE of the following: 12**

- a) Explain any two logical operators in Java with example.
- b) What is constructor? List types of constructor. Explain parameterized constructor with suitable example.
- c) Implement the following inheritance. Refer Fig. No. 01.

Fig. No. 01

- d) Explain Life Cycle of the applet with neat diagram.
- e) Create a new test file named "data.txt" using the **File** class. Write a program to count number of words of "data.txt" using stream classes.

**5. Attempt any TWO of the following: 12**

- a) Explain the concept of argument passing and the usage of 'this' keyword in Java give example to illustrate their usage and benefits.
- b) Explain the concept of packages in Java and their significance in software development. Write an example to illustrate the usage and benefits of using packages.
- c) Explain the concept of exception handling in Java and its importance in robust programming. Provide an example to illustrate the implementation and benefits of exception handling.

**6. Attempt any TWO of the following: 12**

- a) Write a program to define class Employee with members as id and salary. Accept data for five employees and display details of employees getting highest salary.
  - b) Define exception called 'No Match Exception' that is thrown when the password accepted is not equal to 'MSBTE'. Write the program.
  - c) Write a program to design an Applet showing three concentric circles filled with three different colors.
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