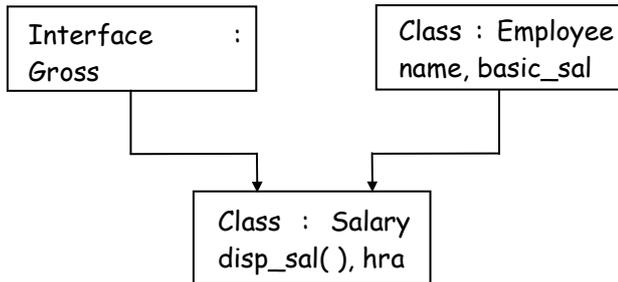Instruction : (1) **All** questions are **compulsory**.
(2) Answer each next main question on a **new** page.
(3) Illustrate your answers with neat sketches **wherever** necessary.
(4) Figures to the **right** indicate **full** marks.
(5) Assume suitable data, if **necessary**.

1. (a) Attempt any **THREE** of the following: [12]
   (i) Describe any two relational and any two logical operators in Java with simple example.
   (ii) What is scope of variable? Give example of class variable, instance variable and local variable.
   (iii) Write any two methods of array list class with their syntax.
   (iv) What is thread? Draw thread life cycle diagram in Java.

   (b) Attempt any **ONE** of the following: [6]
   (i) Create a class 'Rectangle' that contains 'length' and width' as data members. From this class derive class box which has additional data member 'depth'. Class 'Rectangle' consists of a constructor and an area ( ) function. The derived 'Box' class have a constructor and override function named area ( ) which returns surface area of 'Box' and a volume ( ) function. Write a java program calling all the member function.
   (ii) Design an applet which display equals size three rectangle one below the other and fill them with orange, white and green color respectively.

2. Attempt any **TWO** of the following: [16]
   (a) Write a program to implement a vector class and its method for adding and removing elements. After remove display remaining list.
   (b) What is meant by interface? State its need and write syntax and features of interface.
   (c) Write an applet program that accepts two input, strings using <Param> tag and concatenate the strings and display it in status window.

3. Attempt any **FOUR** of the following: [16]
   (a) Describe the following attributes of applet :
       (i) Codebase   (ii) Alt   (iii) Width   (iv) Code
   (b) How garbage collection is done in Java? Which methods are used for it?
   (c) Describe following string class method with example :
       (i) compareTo( )
       (ii) equalsIgnoreCase( )
   (d) Write any two methods of File and FileInputStream class each.
   (e) Describe use of 'super' and 'this' with respect to inheritance.

4. (a) Attempt any **THREE** of the following: [12]
   (i) What is the use of try catch and finally statement give example.
   (ii) Explain applet life cycle with suitable diagram.
   (iii) Write a program to generate Fibonacci series 1 1 2 3 5 8 13 21 34 55 89.
   (iv) State syntax and describe any two methods of map class.

(b) Attempt any **ONE** of the following: **[6]**
   (i) What are the access control parameters? Explain the concept with suitable example.
   (ii) What is garbage collection in Java? Explain finalize method in Java.

5. Attempt any **TWO** of the following: **[16]**
   (a) Define an exception called 'No match Exception' that is thrown when a string is not equal to "MSBTE". Write program.
   (b) Write a program to create two threads, one to print numbers in original order and other in reverse order from 1 to 10.
   (c) Explain <applet> tag with its major attributes only. State purpose of get AvailableFontFamilyName( ) method of graphics environment class.

6. Attempt any **FOUR** of the following: **[16]**
   (a) Write a program to implement following inheritance :

```
┌──────────────────────┐      ┌──────────────────────┐
│ Interface        :   │      │ Class : Employee     │
│ Gross                │      │ name, basic_sal      │
└──────────────────────┘      └──────────────────────┘
            │                              │
            └──────────────┬───────────────┘
                           ↓
              ┌──────────────────────┐
              │ Class  :  Salary     │
              │ disp_sal( ), hra     │
              └──────────────────────┘
```

   (b) What is use of Array list class? State any two methods with their use from ArrayList.
   (c) Explain method overloading with example.
   (d) Explain serialization in relation with stream classes.
   (e) What is byte code? Explain any two tools available in JDK.
   (f) Write a java program to copy contents of one file to another file.

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T Y Diploma Sem-V: Paper Discussion Schedule

Branches	Date	Day	Timing	Centres
Computer Group	8 Nov. 2018	Thursday	9 a.m. to 11 a.m.	Thane
	8 Nov. 2018	Thursday	12 noon to 2 p.m.	Kalyan
	9 Nov. 2018	Friday	9 a.m. to 11 a.m.	Dadar, Borivali