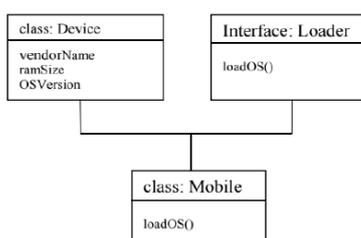


Time: 3 Hrs.]

- Instructions :** (1) All questions are compulsory.  
(2) Illustrate your answers with neat sketches wherever necessary.  
(3) Figures to the right indicate full marks.  
(4) Assume suitable data, if necessary.  
(5) Preferably, write the answers in sequential order.

1. Attempt any **FIVE** of the following : [10]
- (a) Give syntax and example of following math functions.
    - (i) `sqrt ( )`                      (ii) `pow ( )`
  - (b) Enlist access specifiers in Java.
  - (c) State two ways to create thread.
  - (d) State the use of static keyword.
  - (e) Enlist any four keywords used for exception handling in Java.
  - (f) Give syntax of `<param>` tag to pass parameters to an Applet.
  - (g) List two bitwise operators and two logical operators.
2. Attempt any **THREE** of the following : [12]
- (a) Write a program to find largest between two numbers using '?' operator.
  - (b) Define class Student with suitable data members create two objects using two different constructors of the class.
  - (c) Describe life cycle of thread with suitable diagram.
  - (d) Write a program to count number of words form a text file using stream classes.
3. Attempt any **THREE** of the following : [12]
- (a) Write a program to divide any positive even integer by 2 using bitwise shift operator.
  - (b) State need of interface with suitable examples.
  - (c) Give usage of following methods:
    - (i) `drawOval()`                      (ii) `getFont()`                      (iii) `drawArc()`                      (iv) `getFamily()`
  - (d) Enlist types of stream classes and describe methods for reading and writing data for each type.
4. Attempt any **THREE** of the following : [12]
- (a) Describe types of variables in Java with their scope.
  - (b) Describe life cycle of applet with suitable diagram.
  - (c) Write a program to create package Math\_s having two classes as addition and subtraction. Use suitable methods in each class to perform basic operations.
  - (d) Differentiate between Java Application and Java Applet (any 4 points)
  - (e) Write a program to copy content of file "input.txt into file "output.txt".
5. Attempt any **TWO** of the following : [12]
- (a) Write a step to declare and define two and three dimensional arrays of a class.
  - (b) Implement following inheritance:



Display details of devices from load OS ( ) method of class Mobile.

(c) Write a program to define two threads for displaying even and odd numbers from 1 to 20 respectively with a delay of 200 ms after each number.

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) Describe types of Errors and exceptions in details.
- (c) Design an Applet to pass username and password as parameters and check if password contains more than 8 characters.

□ □ □ □ □

**Paper Discussion Schedule for: S.Y. Diploma Sem.-IV**

Date	Day	Timing	Centre
21 April 2019	Sunday	11 a.m. to 1 p.m.	Borivali
21 April 2019	Sunday	9 a.m. to 11 p.m.	Thane