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Candidate's Seat No : \_\_\_\_\_

**GUJARAT UNIVERSITY**

**B. E. Sem III (C.E.) Examination**

**Object Oriented Concepts & Programming**

**Saturday, 29th December, 2007]**

**[Time : 3 Hours  
Max. Marks : 100**

- Instructions :** (1) Attempt all questions.  
 (2) Answer to the two sections must be written in separate answer books.  
 (3) Assume suitable data if required.  
 (4) Figures to the right indicate full marks.

**SECTION I**

- 1 (a) Write Short note on following. 08  
 (i) Inheritance & Generalization.  
 (ii) Sequence Diagram.  
 (b) Define Object, Class & Object Oriented. Explain various OO Themes. 08
- 2 (a) Draw Class model for Windowing System. 08  
**OR**  
 (a) Write the scenario for withdrawing money from ATM & Draw the Event Trace Diagram for same scenario. 08  
 (b) Write short notes on the following 10  
 (i) What is the multiplicity? Explain with example.  
 (ii) What is Abstract class? Explain with example.  
 (iii) Explain Use-case Diagram.  
 (iv) Draw Activity Diagram Stock trade processing  
 (v) What is Modeling? Explain purpose of modeling
- 3 (a) Attempt Any Four : 08  
 (i) Data Store  
 (ii) Data Flow  
 (iii) Event  
 (iv) Actor  
 (v) Aggregation  
 (c) Define State Diagram & Nested-State Diagram. Draw Nested-State Diagram for Phone Line System. 08

**SECTION-II**

- 4 (a) What will be the output produced by the following program 02
- ```

class conversion{
    public static void main(String args[]){
        byte a;
        int x=400;
        double b=453.678;
        a=(byte)x;
        System.out.println(a),
        System.out.println(x),
        x=(byte)b;
        System.out.println(a),
        System.out.println(x),
    }
}

```

**P. T. O.**

- (b) Answer the following question: 16
- (i) "JAVA is Robust " Explain
  - (ii) What is JVM? Explain its use.
  - (iii) Explain Byte Code & Native Code.
  - (iv) What is Multithreading? Explain.
  - (v) Explain Garbage Collection.
  - (vi) Explain Abstraction & Encapsulation.
  - (vii) Explain Advantage of Super Keyword.
  - (viii) What is Wrapper Class?
- 5 Attempt Any TWO of the following: 16
- (i) A mark list containing registers number & marks for a subject is given. If the Marks are  $< 0$ , user defined `IllegalMarkException` is thrown out and handled with the message "Illegal Mark" For all valid marks, the candidate will be declared as "PASS" if the marks are equal to or greater than 40, otherwise it will be declared as "FAIL". Write a class `Illegal MarkException`. Write another class `MarkProcess` to process & validate the Marks
  - (ii) Write a program in Java language which accepts a character and Ten number as Arguments. If the value of character passed at the command line argument is either 'A' or 'a' then program should sort the Ten numbers in Ascending order and if the value of character happens to be either 'd' or 'D' then should sort the Ten number in Descending order.
  - (iii) Write a Java program using the concepts of File streams to implement "copy" command which copies content of one file to another file
- 6 Attempt the following. 16
- (a) Explain the Life cycle of Applet in Detail.
  - (b) Explain pass by value & pass by reference with examples.
  - (c) What is Exception? Explain the Exception Handling statements
  - (d) Describe Inter-Thread Communication
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