Indian Institute of Information Technology Vadodara

Course ID: CS 201
Full Marks: 45

Course name: Object Oriented Design and Programming
Date: 20.10.2022   **Exam Duration:** 180 minutes

Instructions: Attempt All Questions Sequentially.
Mention SET Number at the Top of Answer Sheet.

SET – A

1. What do you mean by an Industrial use Software?   [2]

2. Differentiate between Sequence diagram and Activity diagram.   [2]

3. Constructors can be Static in Java. State yes or no, and justify accordingly.   [1 + 3 = 4]

4. Can we use UML for user interface (UI) design? Give a short explanation for justifying your answer.   [1 + 3 = 4]

5. Consider the following code snippet,

```
class Test_Main {
    public static void main(String args[])  {
        try {
            System.out.println("IIIT");
        }
        finally {
            System.out.println("Vadodara");
        }}}
```

Will the code Compile? Explain your choice with proper justification.   [1 + 3 = 4]

6. When and why a software development process would choose the following program language for implementation;
   * C
   * Java

Explain with a simple example of a scenario (when) and subsequently justifying it (why).   [3 + 3 = 6]

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7. Identify classes and their attributes for each of the requirements (F1 to F4). Use proper notations for representing classes. Need to present the class diagram with explanation. Class diagram (along with necessary attributes, multiplicity, methods, etc.) should depict only the below facts.

A point-of-sale application needs to record all purchases. Here are a few facts:
- F1: Customers make purchases.
- F2: Customers have names.
- F3: Purchases have dates.
- F4: Purchases have amounts equal to the sum of the prices of the items sold.

[3 + 3 = 6]

8. Given the Code fragment,

```
interface Readable {
  public void readBook( );
  public void setBook( );
}

abstract class Book implements Readable {
  public void readBook() { }
}

class EBook extends Book {
  public void readBook() { }
}

public class Test_Main {
  public static void main (String args[])
  {
    System.out.println("IIIT-Vadodara");
  }
}
```

What needs to be added in the above program so the it prints "IIIT-Vadodara". Explain the problem and why the addition solves the problem.

[2 + 2 + 2 = 6]

9. What are the different conditions when a Thread gets interrupted? How the conditions interrupt the execution of the Threads? Write a single program to depict the above-mentioned conditions. The program output should be able to show how the Thread behaves as per the conditions.

[2 + 2 + 5 + 2 = 11]