VIT
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

Continuous Assessment Test – I

Programme Name & Branch: B.Tech (All)

Course Name & Code: Java Programming CSE1007

Class Number: 5876,5769,6093,5773

Slot: D1+TD1 Exam Duration: 1 Hour 30 Minutes Maximum Marks50 Marks

ANSWER ALL THE QUESTION (5x10=50 Marks)

1. ABC Corporation needs to have a Payroll System for creation of Payslip for each hourly waged employee . For each hours upto35 , the employee gets paid by **BASIC PAY*HOURSWORKED**. For any overtime hours ,the employee gets **BASICPAY*5%**. The maximum hours that an employee work will be 65 hours. Create a class and write the required methods and members that gets basic pay and hours worked and displays the total salary. Test the class in main method for each of the employee.

2. (i). Elaborate the various cases and its corresponding reasons considered for the usage of switch case statements of java**(5 Marks)**

(ii).Write a Java program to find out the age of a person from given 8 digit string birthdate. The first two represents day , next two digits represents month and last four digits represents year.**(5 Marks)**

3. (i) Develop an abstract class for Bus from which the LiquidFuel and Electric buses are derived. Each bus should contain the function mileage () to calculate the mileage from the corresponding inputs. Use array of objects to test the mileage method in a Test class.**(5 Marks)**

(ii).Write a Java program using array that reads in a sequence of integers and prints out both the integer that appears in a longest consecutive run and the length of the run. For example, if the input is 1 2 2 1 5 1 1 7 7 7 7 1 1, then your program should print Longest run: 4 consecutive 7s.**(5 Marks)**

4. Let's Assume to create Commercial Vending Machine Software which accommodates three types of Vending Machines namely Coca-Cola, Pizza and French-Fry Products separately. Create an Interface for defining the following required methods

```
voidvendItem();
intgetItemsRemain();
intgetItemsSold();
doublegetCashReceived();
voidloadItems(int n);
```

Define separate subclasses and its members such as intitemsRemaing,intitemsSold,double cashrecieved for each types of vending machines and also implement the methods defined above. Test the polymorphic principle of Dynamic Method Dispatch for the respective vending machines methods with typical illustration.

5. Demonstrate the implementation of compile time and runtime polymorphism in Java

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