Practice Questions on Inheritance and classes

1. Write a class 'Employee' with the following Data Members and Methods

Data Members
int empno
string name
string job
double salary
Constructors : Write Overloaded constructors to accept the following combinations
1. All fields
2. empno & Salary
3. Empno,name & Salary
Methods/functions
void displayProfile() -Display employee details
double calMonthlyPayroll(int nod,int attend,int noh) -calculate the payroll based on the following criteria and return the salary per month.
No of Leaves (nol) = nod -noh -attend
no of payroll days (nopd) = nod-nol
payroll = salary per month/30 * nopd
Write Main Method to demonstrate the usage of the object and method calls on that.

10Marks

2. Bank offers various types of loans like Gold Loan, Vehicle Loan, and Mortgage Loan to customers. Write an abstract class to represent Loan class with the following properties and methods

Properties:
-AccountNo
-AccountTitle
-Address
-LoanType
-LoanRemarks
-LoanAmount
-NoOfInstallments
-InstallmentsPaid
-TotalToBePaid
-TotalPaid
-Nominee
-LoanTerm (no of Months)
-StartDate
-RateOfInt (static & readonly)

Methods:
-PayEMI(doube amt) -to add the amount to Loan's totalPaid
-CalEMI() -to Calculate the EMI for the given principal amount, rate of interest and loan term.
-CalTotalToBePaid() -abstract method

3.
What is the output of the following code

```
class IncDecOperatorEx1{
public static void main(String[] args){
int x,y,z;
x=y=z=200;
x=y++ + z-- + ++y;
y=--z + x++ - z--;
z=x-- + y-- + --x;
System.out.println(x);
System.out.println(y);
System.out.println(z);
}
}
```

4. Write a program to remove the duplicate elements of a given array and return the new length of the array.
Sample array: [20, 20, 30, 40, 50, 50, 50]
After removing the duplicate elements the program should return 4 as the new length of the array.

5. Create a class 'Degree' having a method 'getDegree' that prints "I got a degree". It has two subclasses namely 'Undergraduate' and 'Postgraduate' each having a method with the same name that prints "I am an Undergraduate" and "I am a Postgraduate" respectively. Call the method by creating an object of each of the three classes.
4. Create a class named 'Member' having the following members:
Data members
1 - Name
2 - Age
3 - Phone number
4 - Address
5 - Salary
It also has a method named 'printSalary' which prints the salary of the members. Two classes 'Employee' and 'Manager' inherits the 'Member' class. The 'Employee' and 'Manager' classes have data members 'specialization' and 'department' respectively. Now, assign name, age, phone number, address and salary to an employee and a manager by making an object of both of these classes and print the same.