QUESTION 1

Design a class name ShowRoom with the following description:
Instance variables/data members:
String name: to store the name of the customer.
long mobno: to store customer's mobile number.
double cost: to store the cost of the item purchased.
double dis: to store the discount amount.
double amount: to store the amount to be paid after discount.
Methods:
ShowRoom(): default constructor to initialize the data members
void input(): to input customer name, mobile number, cost
void calculate(): to calculate discount on the cost of purchased items, based on the following criteria

.3021	Discount(In percentage)
Less than or equal to ₹ 10000	5 %
More than ₹ 10000 and less than or equal to ₹ 20000	10 %
More than ₹ 20000 and less than or equal to ₹ 35000	15 %
More than ₹ 35000	20%

void display()- To display customer, mobile number, amount to be paid after discount.
Write a main() method to create an object of the class and call the above methods.

QUESTION 2

Design a class RailwayTicket with the following description:
Instance variables/data members:
String name: to store the name of the customer.
String coach: to store the type of coach customer wants to travel.
long mobno: to store customer's mobile number.
int amt: to store basic amount of ticket.
int totalamt: to store the amount to be paid after updating the original amount.
Methods:
void accept(): to take input for name, coach, mobile number and amount.
void update(): to update the amount as per the coach selected. Extra amount to be added in the amount as follows:

Type of coaches Amount
First_AC 700
Second_AC 500
Third_AC 250
sleeper None
void display(): To display all details of a customer such as name, coach, total amount and mobile number.
Write a main() method to create an object of the class and call the above methods.

QUESTION 3

Define a class Electric Bill with the following specifications: [15]

class: ElectricBill
Instance Variable/ data member:
String n – to store the name of the customer
int units – to store the number of units consumed
double bill – to store the amount to paid
Member methods:
Void accept() – to accept the name of the customer and number of units consumed
Void calculate() – to calculate the bill as per the following tariff :
Number of units — Rate per unit
First 100 units — Rs.2.00
Next 200 units — Rs.3.00
Above 300 units — Rs.5.00
A surcharge of 2.5% charged if the number of units consumed is above 300 units.
Void print() – To print the details as follows :
Name of the customer ………
Number of units consumed ……
Bill amount …….
Write a main method to create an object of the class and call the above member methods.

QUESTION 4

Define a class named BookFair with the following description: [15]

Instance variables/Data members:
String Bname – stores the name of the book.
double price – stores the price of the book.

Member Methods:
(i) BookFair() – Default constructor to initialize data members.
(ii) void Input() – To input and store the name and the price of the book.
(iii) void calculate() – To calculate the price after discount. Discount is calculated based on the following criteria.

PRICE DISCOUNT
Less than or equal to Rs 1000 2% of price
More than Rs 1000 and less than or equal to Rs 3000 10% of price
More than Rs 3000 15% of price
(iv) void display() – To display the name and price of the book after discount.

Write a main method to create an object of the class and call the above member methods.

QUESTION 5

Define a class ParkingLot with the following description:
Instance variables/data members:
int vno – To store the vehicle number
int hours – To store the number of hours the vehicle is parked in the parking lot
double bill – To store the bill amount
Member methods:
void input() – To input and store vno and hours

void calculate() – To compute the parking charge at the rate of Rs.3 for the first hour or part thereof, and Rs.1.50 for each additional hour or part thereof.
void display() – To display the detail
Write a main method to create an object of the class and call the above methods

QUESTION 6:

Define a class named movieMagic with the following description:

Instance variables/data members:

int year – to store the year of release of a movie
String title – to store the title of the movie.
float rating – to store the popularity rating of the movie. (minimum rating = 0.0 and maximum rating = 5.0)

Member Methods:
(i) movieMagic() Default constructor to initialize numeric data members to 0 and String data member to "".
(ii) void accept() To input and store year, title and rating.
(iii) void display() To display the title of a movie and a message based on the rating as per the table below.
RATING MESSAGE TO BE DISPLAYED 0.0 to 2.0 Flop 2.1 to 3.4 Semi-hit 3.5 to 4.5 Hit 4.6 to 5.0 Super Hit Write a main method to create an object of the class and call the above member methods.

QUESTION 7

Define a class called FruitJuice with the following description: [15]
Instance variables/data members:
int product_code – stores the product code number
String flavour – stores the flavor of the juice.(orange, apple, etc)
String pack_type – stores the type of packaging (tetra-pack, bottle etc)
int pack_size – stores package size (200ml, 400ml etc)
int product_price – stores the price of the product
Member Methods:
FriuitJuice() – default constructor to initialize integer data members
to zero and string data members to "".
void input() – to input and store the product code, flavor, pack type,
pack size and product price.
void discount() – to reduce the product price by 10.
void display() – to display the product code, flavor, pack type,
pack size and product price.

QUESTION 8

Define a class called Library with the following description:

Instance variables/data members:
Int acc_num – stores the accession number of the book
String title – stores the title of the book stores the name of the author

Member Methods: (i) void input() – To input and store the accession number, title and author.

(ii)void compute – To accept the number of days late, calculate and display and fine charged at the rate of Rs.2 per day.
(iii) void display() To display the details in the following format: Accession Number Title Author.

Write a main method to create an object of the class and call the above member methods.

QUESTION 9

Define a class called mobike with the following description: [15]
Instance variables/data members: int bno – to store the bike's number
int phno – to store the phone number of the customer
String name – to store the name of the customer
int days – to store the number of days the bike is taken on rent
int charge – to calculate and store the rental charge
Member methods:
void input( ) – to input and store the detail of the customer.
void computer( ) – to compute the rental charge
The rent for a mobike is charged on the following basis.
First five days Rs 500 per day;
Next five days Rs 400 per day
Rest of the days Rs 200 per day
void display ( ) – to display the details in the following format:
Bike No. PhoneNo. No. of days Charge

QUESTION 10

Define a class 'Student described as below:
Data members/instance variables : name,age,m1,m2,m3 (marks in 3 subjects), maximum, average
Member methods :
(i) A parameterized constructor to initialize the data members.
(ii) To accept the details of a student.
(iii) To compute the average and the maximum out of three marks.
(iv) To display the name, age, marks in three subjects, maximum and average.
Write a main method to create an object of a class and call the above member methods.

QUESTION 11

Define a class named FruitJuice with the following description:

Data Members	Purpose
int product_code	stores the product code number
String flavour	stores the flavour of the juice (e.g., orange, apple, etc.)
String pack_type	stores the type of packaging (e.g., tera-pack, PET bottle, etc.)
int pack_size	stores package size (e.g., 200 mL, 400 mL, etc.)
int product_price	stores the price of the product

Member Methods	Purpose

FruitJuice()	constructor to initialize integer data members to 0 and string data members to ""
void input()	to input and store the product code, flavour, pack type, pack size and product price
void discount()	to reduce the product price by 10
void display()	to display the product code, flavour, pack type, pack size and product price

QUESTION 12

The basic salary of employees is undergoing a revision. Define a class called Grade_Revision with the following specifications:

Data Members	Purpose
String name int bas	to store name of the employee
int expn	to store basic salary
double inc	to consider the length of service as an experience to store increment
double nbas	to store new basic salary (basic + increment)

Member Methods   **Purpose**

Grade_Revision() constructor to initialize all data members void
accept()   to input name, basic and experience
void increment()   to calculate increment based on experience as per the table given below void
display()   to print all the details of an employee

Experience	Increment
Up to 3 years	₹1,000 + 10% of basic
3 years or more and up to 5 years	₹3,000 + 12% of basic
5 years or more and up to 10 years	₹5,000 + 15% of basic
10 years or more	₹8,000 + 20% of basic

Write the main method to create an object of the class and call all the member methods.

QUESTION 13:
         Define a class Bill that calculates the telephone bill of a consumer with the following description:

Data Members	Purpose
int bno	bill number
String name	name of consumer
int call	no. of calls consumed in a month
double amt	bill amount to be paid by the person

Member Methods	Purpose
Bill()	constructor to initialize data members with default initial value
Bill(...)	parameterised constructor to accept billno, name and no. of calls consumed

Calculate() to calculate the monthly telephone bill for a consumer as per the table given below Display() to display the details

Units consumed   Rate

First 100 calls   ₹0.60 / call

Next 100 calls   ₹0.80 / call

Next 100 calls   ₹1.20 / call

Above 300 calls ₹1.50 / call

Fixed monthly rental applicable to all consumers: ₹125
Create an object in the main() method and invoke the above functions to perform the desired task.

QUESTION 14:
Define a class customer as below

Data members:
cardName–Name of the card holder
cardNo – a long card number
cardType – Type of the card character 'P' for Platinum, 'G' for Gold, 'S' for Silver.

Member methods:

• Customer() – Parameterised constructor to initialize all data members.
• Compute () –To compute the cash back after availing the discount based on the card type.

Card Type	Cash Back
Silver 'S',	2% of the purchase amount
Gold 'G'	5% of the purchase amount
Platinum 'P'	8% of the purchase amount

• display (). To display the details in the below format

Card Holder Name	Card Number	Purchase Amount	Cash back

QUESTION 15:
Write a program to define a class HotelBill as below

Data Members:

cust_name, check_in_date, check_out_date, no_of_days, bill

Member Methods:

take_input (): to input all member variables.

compute (): that calculates and displays the bill as below:

No. of days	Rate/day
First 5 days	250
Next 10 days	500
Above 15 days	300

QUESTION 16:
Define a class to describe your friends as follows:

Data Members: serial number, name, address, phone number, date_of_birth, birthday month, birth year.

Member Methods:

(i)   To accept the information of a friend.

(ii)   To display a friend's details.

Write main to create class objects and call the methods.