Department of Computer Science & Engineering
Semester III
OOPs With C++(TCS-307)
Assignment-1

Note:
Date of Assignment: 09 Oct 2022
Date of Submission: 16 Oct 2022

Q1. An electronics shop has announced the following seasonal discounts on the purchase of certain items: **CO1**

PURCHASE AMOUNT IN RS.	DISCOUNT ON LAPTOP	DISCOUNT ON DESKTOP PC
0 – 25000	0.0%	5.0%
25001 – 57000	5.0%	7.6%
57001 – 100000	7.5%	10%
More than 100000	10.0%	15.0%

Write a program based on the above criteria to input name, address, amount of purchase and the type of purchase (L for Laptop and D for Desktop) by a customer. Compute and print the net amount to be paid by a customer along with his name and address.
(Hint: Discount = (discount rate / 100) * amount of purchase, Net amount = amount of purchase – discount)

(Use switch statement)

Q 2. Using the switch statement, write a menu-driven program to calculate the maturity amount of a bank deposit. **CO1**

The user is given the following options:
(i) Term Deposit
(ii) Recurring Deposit

For option (i) accept Principal (p), rate of interest (r) and time period in years (n). Calculate and output the maturity amount (a) receivable using the formula a = p[1 + r / 100]n.

For option (ii) accept monthly installment (p), rate of interest (r) and time period in months (n). Calculate and output the maturity amount (a) receivable using the formula a = p * n + p * n(n + 1) / 2 * r / 100 * 1 / 12.
For an incorrect option, an appropriate error message should be displayed.

Q3. A special two-digit number is such that when the sum of its digits is added to the product of its digits, the result is equal to the original two-digit number.
Example: Consider the number 59.
Sum of digits = 5 + 9 = 14
Product of its digits = 5 x 9 = 45
Sum of the sum of digits and product of digits= 14 + 45 = 59
Write a C++ program to accept a two-digit number. Add the sum of its digits to the product of its digits. If the value is equal to the number input, output the message "Special 2-digit number" otherwise, output the message "Not a Special 2-digit number". **CO1**

Q4. WAP in C++ to find the smallest digit of an integer that is input: **CO1**
Sample input: 6524
Sample output: smallest digit is 2

Q5.

An **Evil** number is a positive whole number which has even number of 1's in its binary equivalent.

Example: Binary equivalent of 9 is 1001, which contains even number of 1's.
Thus, 9 is an Evil Number.

A few Evil numbers are 3, 5, 6, 9....

Design a program to accept a positive whole number 'N' where N>2 and N<100. Find the binary equivalent of the number and count the number of 1s in it and display whether it is an Evil number or not with an appropriate message.

Test your program with the following data and some random data:

CO1