**Instructor Name: Engr.Zakria Bacha**  **Course: PF Lab**

**Quiz 01: (10 Marks)**

**Question: 1 (6.5)**

Create a calculator program for a customer/user that takes two numbers as input and performs the following operations: addition, subtraction, division, and multiplication. The program should display the results of each operation.

The program should include the following functionality:

1. Prompt the user with the message: ***“Please enter your first number.”***
2. After receiving the first input, display the message: ***“Please enter your second number.”*** *Perform the above mentioned four operations.*
3. Print the results of each operation on the screen.

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**Question:2** **(3.5 Marks)**

1. **Store an Integer in the Range of 1 to 99: (1 Mark)**

* Imagine you are working as a software developer in software company. You are making HR System for total 99 employees. Employee ID is in the range from 1 to 99 and you want to store employees ID within the range of 1 to 99 without wasting memory.
* Write the **correct data type to declare a variable** that stores an employee ID in this range (1 to 99) with minimum memory in bytes and print only one Employee ID on the screen.

1. **Display Memory Size of the Selected Data Type: (1 Mark)**

* Show the memory size in bytes of the data type you selected on the console.

1. **Scholarship Selection Message: (1.5 Marks)**

* Suppose a student named "X" is applying for an MS scholarship, and his CGPA is greater than 3.00. Display a message on the console with the number 1, such as “You are selected for MS Scholarship with number 1.”
* The next time, another student named "Y" applies for the scholarship, and his GPA is less than 3.0. Display a message such as “You are not selected with number 0.”
* ***Note: Do not explicitly write the number 0 or 1 in the printf statement. Use the correct data type to represent it and printing on the screen***.

**Question: 01**

Do the following operation in one line and print the solution on console output. But the output should be according to the Math rule.

2x4 = 2.

2x2

**Question: 02 (5 Marks)**

You are working for a financial institution that offers vehicle loans to customers. Your task is to develop a C program that calculates the monthly installment for a vehicle on user input. The program should calculate and shows the monthly installment of the user on the console screen.

***Hint: Use float data for all variables.***

**Input Variables:**

* **Loan Amount:** User will input total amount of money borrowed for the vehicle.
* **Annual Interest Rate:** Calculate 10% of loan amount of the user.
* **Loan Term:** User will input the term of the loan in years.
* **Credit Score:** User will input the customer's credit score.

Now calculate the monthly installment by using the following formula.

Monthly Installment = Loan Amount x Annual Interest Rate

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1-(1+credit score) – Loan Term

Show Monthly installment of the user on console.