Lab 1: **MLOPS (BCS-7A)**

- Use Jupyter/VsCode to run your code. Do not use Google Colab.
- Any plagiarism or AI detection will lead to negative marking.
- Allocated time: 1 hour and 20 mins.
- Late submissions will be credited with negative marking.
- Online submissions will lead to ZERO marks.

Question 1:

Write a function *word_frequency* that takes a string paragraph as input, removes punctuation, converts it to lowercase, and returns a dictionary with words as keys and their frequency as values. Note: Use of external libraries is prohibited.

text = "Hello, world! Hello Python. Python is great, and Python is fun."

print(word_frequency(text))

Output is:

{

'hello': 2,

'world': 1,

'python': 3,

'is': 2,

'great': 1,

'and': 1,

'fun': 1

}

Question 2:

Write a function sum(matrix, m,n,r) which has four parameters matrix contains mxn row and r which can have three possible values r=0 means calculate the row-wise sum of matrix values. r=1 means to calculate column-wise sum of the matrix values and r=2 means diagonal and reverse diagonal sum.

Example:

matrix = [

[1, 2, 3],

[4, 5, 6],

[7, 8, 9]] m, n = 3, 3

matrix_sum(matrix, m, n, 0) returns [6, 15, 24]

matrix_sum(matrix, m, n, 1) returns [12, 15, 18]

matrix_sum(matrix, m, n, 2) returns {'main_diagonal': 15, 'reverse_diagonal': 15}

Question 3:

Ask the user to enter your date of birth and find your age in years, months and days without using any external libraries.