School of Basic Sciences
Master of Science in Mathematics
Mid Term Examination - Nov 2023

Duration : 90 Minutes
Max Marks : 50

Sem I - C1PM105B - Programming in Python

General Instructions
Answer to the specific question asked
Draw neat, labelled diagrams wherever necessary
Approved data hand books are allowed subject to verification by the Invigilator

1) Explain the concept of variables in Python and provide examples of different variable types. — K2 (2)

2) Find and explain three different ways to assign a value to a Python variable. — K1 (3)

3) Estimate a Python program to swap the values of two variables without using a temporary variable. — K2 (4)

4) Write a Python function that returns the keys of a dictionary sorted in alphabetical order. my_dict = {'cat': 5, 'dog': 2, 'elephant': 3} — K2 (6)

5) Develop a Python function that takes a list of user-defined strings and returns a new list with the lengths of those strings. — K3 (6)

6) Write a python program of finding the common elements between two given lists and returning them as a new list. — K3 (9)

7) Examine error in the following code. nterms = int.input("How many terms? ") n1, n2 = 0, 1 count = 5 if nterms <= 0: print("Please enter a positive integer) elif nterms == 1: print("Fibonacci sequence upto",nterms,":") print(n1) else: print("Fibonacci sequence:") while count < nterms: print(n1) nth = n1 - n2 n1 = n2 n2 = nth count += 1 — K4 (8)

8) a) Analyze and write a program that takes two user-defined lists as input and returns a new list containing only the common elements. b) Analyze and write a program that checks whether a user-defined list is empty or not. — K4 (12)

OR

Analyze and write a program that takes a user-defined string as input and returns the count of vowels and consonants. — K4 (12)