MAR ATHANASIUS COLLEGE OF ENGINEERING, KOTHAMANGALAM – 686 666.
(GOVERNMENT AIDED AUTONOMOUS ENGINEERING COLLEGE)

DEPARTMENT OF MECHANICAL ENGINEERING

FIRST SESSIONAL EXAMINATION, OCTOBER 2025
S1 MECHANICAL A & B BATCH

B24ES1T01B: PROBLEM SOLVING AND PROGRAMMINGTECHNIQUES (B)

Time –1.5 Hours **Max: 40 Marks**

PART-A
Answer All Questions.

1	Differentiate between the working of a compiler and interpreter. Give examples for both.	**CO1**	**3 Marks**
2	Discuss any three comparison operators used in python with examples.	**CO1**	**3 Marks**
3	Discuss nested if in python with an example.	**CO2**	**3 Marks**

4	Debug the errors in the following code block
	`for i in range(100):`
	`  if i % 3 = 0:`
	`  print(f"Multiple of 3: {i}"`
	`  if i > 50`
	`  print(f"{i} is greater than 50")`
		CO2	**3 Marks**

PART - B
Answer All Questions.

5	a. Discuss the different data types used in python with examples. (8 marks) b. What is an IDE? Discuss its features. Give any four IDEs for python. (6 marks)	**CO1**	**14 Marks**
6	a. What is the use of python loops? Discuss the types of loops used in Python, along with their syntax and examples. (8 marks) b. Write a Python program that finds the factorial of a number using a for or while loop. The program should accept the number from the user. (6 marks)	**CO2**	**14 Marks**