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

DEPARTMENT OF MECHANICAL ENGINEERING

FIRST SESSIONAL EXAMINATION, NOVEMBER 2024
S1 MECHANICAL A & B BATCH

B24ES1T01B: PROBLEM SOLVING AND PROGRAMMINGTECHNIQUES (B)

Time –1.5 Hours **Max: 40 Marks**

PART-A

Answer All Questions.

1	What are the rules to be followed while writing a variable name in Python?	**CO1**	**3 Marks**
2	What are the data types of x in the following using python programming language i. x = 123 ii. x = 'Hello' iii. x = 25.35 iv. x = [12, 23, 'apple', 34.56] v. x = 25.64 + 40.5j vi. x = ('orange', 'banana', 'grape')	**CO1**	**3 Marks**
3	Discuss if-elif-else conditional statement in python with an example	**CO2**	**3 Marks**

4	Debug the errors in the following code block
	for i in range(5):
	if i % 2 = 0:
	print(f"Even number: {i}"
	if i > 5
	print(f"{i} is greater than 5")
		CO2	**3 Marks**

PART - B

Answer All Questions.

5	a. Discuss about compiler and interpreter with examples. How they differ from an IDE. Write down the name of any two IDEs for python. (7 marks) b. What is a flow chart? Discuss the symbols commonly used in drawing a flowchart. Draw a flow chart to find the maximum of three variables: a, b and c. (7 marks)	**CO1**	**14 Marks**
6	a. In Python, loops help us execute a particular process multiple time. Discuss the types of loops used in Python, along with their syntax and examples. (7 marks) **b.** Write a Python program that prints the sum of the first n terms in the following series using a for or while loop. The values of x (a real number) and n (the number of terms) should be provided by the user. Series: $1+x+x^2+x^3+x^4+$ ..... (7 marks)	**CO2**	**14 Marks**