MAR ATHANASIUS COLLEGE OF ENGINEERING, KOTHAMANGALAM

(GOVERNMENT AIDED AUTONOMOUS ENGINEERING COLLEGE)

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

FIRST SESSIONAL EXAMINATION OCTOBER 2026

B24ES1T01A PROBLEM SOLVING AND PROGRAMING TECHNIQUES (S1 EA & EB)

Max. Marks 40 Time: 1.5 Hours

Answer all questions from Part A and Part B

PART A (4X3=12 Marks)

1. Differentiate identifiers, keywords, and constants in C, and illustrate each with a suitable example. (CO1)
2. The following C code is intended to calculate the total cost of five movie tickets. Examine the code, identify the errors, and rewrite it with the necessary corrections. (CO1)

```
#include <stdio.h>
int main()
{
        int length, breadth;
        float area;
        printf("Enter length and breadth: ");
        scanf("%f %f", length, breadth);
        area = length + breadth;
        printf("Area of Rectangle = %d", area)
        return 0;
}
```

3. Construct a C program to accept a number from the user and determine whether it is positive, negative, or zero. (CO2)
4. Differentiate between while and do-while loops in C with a suitable example. (CO2)

PART B (2X14=28 Marks)

5. a) Develop a flowchart and write the pseudocode to find the sum of n natural numbers. (CO1) (7 marks)

   b) Develop a C program to accept the distance travelled (in km) and fuel consumed (in litres) as floating-point values, calculate the mileage in km/L, and display the result correct to two decimal places. (CO1) (7 marks)
6. a) Develop a C program to calculate the factorial of a positive integer entered by a user. (CO2) (7 marks)

   b) Develop a menu-driven C program to calculate the area of a square, rectangle, or circle based on the user's choice. (CO2) (7 marks)

****

Student will be able to:

CO 1: Analyze a computational problem and try to solve it using algorithms, flowcharts and also develop C programs from them using Arithmetic, Logical, Relational and Bitwise operators.

CO 2: Develop C programs with branching and looping statements for processing arrays and matrices

VISION

Endeavour to Ensure Excellence

MISSION

Mould technically competent and morally strong Engineers

Achieve dynamic leadership through quality Education

Cater the needs of industry and community through Emulation

Empower the students to serve the nation with Dedication