Name:.....
Roll No:.....

MAR ATHANASIUS COLLEGE OF ENGINEERING (AUTONOMOUS),
KOTHAMANGALAM - 686666
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

B.TECH FIRST SERIES EXAMINATION, AUGUST 2026 (S5 CS, DS, AIML)
B24CS3P13 INTERNET OF THINGS

Max. Marks: 40 Duration: 1.5 Hours

PART A

Answer all questions. Each question carries 3 marks.

1. Explain how Connected Roadways help address transportation challenges, using Intersection Movement Assist (IMA) as an example.

(CO1)

2. Describe the four evolutionary phases of the Internet and identify the aspect digitized in each phase.

(CO1)

3. Define SANET. Explain its role in smart home automation with a suitable example.

(CO2)

4. List the factors considered when choosing between IP adoption and IP adaptation for last-mile IoT connectivity. A water meter sends a short reading once a week and never receives data back. Based on these factors, identify which IP connectivity approach should be used for this device.

(CO3)

PART B

Answer all questions. Each question carries 14 marks.

5. (a) Explain the oneM2M IoT Standardized Architecture with a neat diagram and describe its functions.

(CO1)(7 marks)

VISION

Mould competent professionals to serve as a valuable resource for society in pursuit of excellence.

MISSION

- Provide quality education tuned to the challenging phases of technology.
- Mould disciplined and Socially Committed engineers capable of professional leadership.
- Promote theoretical and practical understanding, along with critical thinking and logical reasoning.

(b) Illustrate the Simplified IoT Architecture with a neat diagram and describe the Core IoT Functional Stack with the functions of its layers.

(CO1)(7 marks)

6. (a) Design a smart greenhouse using suitable IoT devices to monitor and maintain temperature, humidity, and soil moisture automatically. Apply the concept of smart objects to show how sensing, processing, communication, and actuation work together in the proposed system.

(CO2)(6 marks)

(b) Explain LoRaWAN with respect to its standardization and alliance, physical (PHY) layer, MAC layer, topology, and security.

(CO2)(8 marks)