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

MAR ATHANASIUS COLLEGE OF ENGINEERING
KOTHAMANGALAM – 686666
(Govt. Aided Autonomous Institution)
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

B. TECH FIRST SERIES EXAMINATION AUGUST 2026

(S7 ECE A &B) ECT423 COMPUTER NETWORKS

Max. Marks: 40 Duration: 1.5 Hours

PART A

Answer all questions. Each question carries 3 marks.

1. Two network software engineers from different companies are designing a new real-time collaboration application. Why must they follow a predefined protocol and rely on protocol standardization by bodies like the IETF to ensure successful communication between their applications? (CO1)

2. Analyze circuit-switched versus packet-switched network for an audio streaming service with thousands of active users who stream intermittently. (CO1)

3. An IoT health-monitoring device periodically streams raw sensor data where speed is critical and occasional dropped packets are acceptable. Contrast how TCP and UDP would handle this data stream and justify which transport protocol is better suited for this scenario. (CO2)

4. List the delays experienced when a host sends a 1000-byte packet across a multi-hop packet-switched network. (CO2)

PART B

Answer all questions. Each question carries 14 marks.

5. a. Trace how the application data moves down through each layer of the Internet protocol stack with their functions. Illustrate with an example (CO1)

   b. Alice sends an email message with a photo attachment to Bob. Illustrate how SMTP is utilized during this transfer process, explaining the handshaking phase, message transfer, connection closure, and how non-ASCII attachment data (like photos) is accommodated within standard SMTP commands. (CO1)

P.T.O

6. a. Explain how connection is established between application services with TCP. (CO2)

b. Interpret the UDP segment structure with its applications. (CO2)