

2025

M.Sc. 3rd Semester Examination

COMPUTER SCIENCE

Paper : COS - 306E

(Internet of Things and Embedded Systems)

Full Marks : 50

Time : Two Hours

*The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.*

Group - A

Answer any *four* questions : $2 \times 4 = 8$

1. Define the term Internet of Things (IoT).
2. List any two essential characteristics of IoT.
3. What is the role of sensors in IoT systems?
4. What is Sensitivity error?
5. Give two examples of IoT-based applications.
6. Define transducer and give one real-world example.

Group - B

Answer any *four* questions : $4 \times 4 = 16$

7. Explain the major components of an IoT system.

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8. Discuss the main advantages and disadvantages of the Internet of Things.
9. Differentiate analog and digital sensors with examples.
10. Explain the functional blocks of IoT system.
11. What are IoT enabling technologies? Explain any two in detail.
12. Describe different types of actuators used in IoT applications. Illustrate their operation and significance.

Group - C

Answer any *two* questions : $8 \times 2 = 16$

13. Elaborate on the architecture of an IoT system with the help of diagram mentioning the different protocols of each layer.
14. Explain the various IoT Levels and Design Templates with suitable examples.
15. Compare REST-based and WebSocket-based communication APIs. Explain their principles and use cases in IoT systems.
16. Write short note on IoT Communication models.

Internal Assessment : 10 marks
