S.No. : 197

No. of Printed Pages : 4

BCACSN15325

Following Paper ID and Roll No. to be filled in your Answer Book.

PAPER ID : 26428 Roll No. 1 2 3 0 2 6 4 0 2 8

BCA Examination 2025-26

Odd Semester

INTERNET OF THINGS

Time : Three Hours] *[Maximum Marks : 60*

Note :– Attempt all questions.

SECTION–A

1. Attempt all parts in short : $8 \times 1 = 8$

(a) Define the internet of things (IoT).

(b) What is the role of sensors in IoT?

(c) Define an actuator.

(d) Name two types of digital sensors used in IoT.

(e) What does REST stand for in IoT web services?

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(f) What is the role of a gateway in wireless IoT networks?

(g) What is industrial IoT (IIoT)?

(h) Name two IoT application in agriculture.

SECTION – B

2. Attempt any two part of the following : $2 \times 6 = 12$

(a) Describe the conceptual framework of IoT and explain the functions of each layer.

(b) Explain the architecture and advantages of wireless sensor networks (WSNs).

(c) Explain the architecture and applications of Zigbee in IoT networks.

(d) Discuss IoT applications in the health sector, emphasizing data privacy and security.

SECTION – C

Note:- Attempt all questions. Attempt any two parts from each question. $5 \times 8 = 40$

3. (a) Discuss major application areas of IoT with examples.

(b) Explain machine-to machine (M2M) communication and how it differs from IoT.

(c) Describe the design principles for connected devices, including security and energy efficiency.

4. (a) Explain different types of sensors used in IoT.

(b) Explain wireless sensor networks (WSN) and participatory sensing.

(c) Compare IoT hardware platforms arduino and raspberry pi.

5. (a) Describe the HART protocol and its relevance in industrial IoT.

(b) Describe IPv6 and explain why it is important for IoT scalability.

(c) Discuss the differences between AMQP and MQTT protocols in IoT communication.

6. (a) Describe common attacks on IoT systems and possible defense mechanisms.

(b) Describe IoT applications in agriculture and the role of security in protecting sensor data.

(c) Explain IoT design ethics and why ethical considerations are important in IoT applications.

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