C   **Reg. No. :**

Answer ALL Questions

PART A - (5 x 1 = 5Marks)

1. What is the full form of DHCP in IoT communication protocols?   CO1- U

    (a) Dynamic Host Communication Protocol   (b) Domain Host Communication Protocol

    (c) Dynamic Host Control Protocol   (d) Domain Host Control Protocol

2. What is the role of an IoT gateway?   CO1- U

    (a) Manage billing systems   (b) Bridge sensor data to the cloud

    (c) Charge connected devices   (d) Translate languages

3. In SCADA architecture, which component is responsible for field-level data   CO1- U
    acquisition?

    (a) Cloud Server   (b) Remote Terminal Unit (RTU)   (c) Web Browser   (d) OPC-UA Server

4. In a Smart Light IoT project, which components are typically required?   CO1- U

    (a) PC, router, modem   (b) Light bulb, motion sensor, and microcontroller

    (c) Router, firewall, switch   (d) LED matrix, RAM

5. Which protocol is not optimized for constrained IoT environments?   CO1- U

    (a) CoAP   (b) 6LoWPAN   (c) MQTT   (d) HTTP

PART – B (5 x 3= 15 Marks)

6. Mention any three technological advancements that contributed to the evolution of IoT.   CO1-U

7. List any three functions of an IoT Gateway.   CO1-U

8. How are digital twins used in automation?   CO1-U

9. List the main features of the Packet Tracer programming environment.   CO1-U

10. How does IoT technology support remote tracking of patient health? CO1-U

PART – C (5 x 16= 80 Marks)

11. (a) Explain the role of general enablers in the development of IoT systems. CO1-U (16)

Or

(b) Explain about the seven layered architecture of IoT with neat diagrams CO1-U (16)

12. (a) Design an IoT-based Car Parking System and describe how it will benefit our lives. CO2-App (16)

Or

(b) Construct a smart education system using Internet of Things. CO2-App (16)

13. (a) Describe about the Characteristics of SCADA and modes of Operation with real time Applications. CO1-U (16)

Or

(b) List and explain the current trends in automation systems such as IoT integration, edge computing, and AI. CO1-U (16)

14. (a) Analyze the advantages of using virtual programming languages in terms of platform independence, portability, and execution efficiency. Compare these benefits with those offered by traditional compiled and interpreted languages, citing relevant examples. CO4-Ana (16)

Or

(b) Analyze the effectiveness of Cisco Packet Tracer's visual programming environment in designing and simulating basic IoT devices like a Smart Light system. Compare its features, usability, and simulation capabilities with alternative tools such as Tinkercad or Node-RED, and evaluate which platform is more suitable for educational or prototyping purposes. CO4-Ana (16)

15. (a) Describe about the four emerging pillars of IoT. CO1- U (16)

Or

(b) Describe in detail about evolution of IoT Paradigms. CO1- U (16)

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