

PRACTICE SET

B.Tech CSE VII Semester Examination, December 2025

Program: B.Tech

Subject: Internet of Things

Subject Code: 3TECCS401

Course Outcomes	Description
CO1	Understand general concepts of Internet of Things.
CO2	Understand different IoT Architecture and Communication Protocol
CO3	Identify different sensor networks, Networking Protocol which can measure different parameters or activity.
CO4	Learn genesis and impact of IoT applications in the real world.

Section A

(No. of Question 22x 5= 110 Marks)

1. What is Internet of things? Why the Internet of Things (IoT) is considered a disruptive technology? [CO1, Unit 1, BTL LOT, Remember]

2. Mention at least five major application areas of IoT. Give details.

[CO2, Unit -1, BTL LOT, Understand]

3. Why is standardization important in IoT? Explain briefly.

[CO2, Unit 1, BTL LOT, Understand]

4. Define sensing and actuation in the context of IoT. [CO2, Unit 1, BTL LOT, Understand]

5. What is Near Field Communication (NFC)? List some key features of NFC.

[CO1, Unit 2, BTL LOT, Apply]

6. Define 6LoWPAN and state its important features.

[CO1, Unit 2, BTL LOT, Apply]

7. Explain IEEE 802.15.4 protocol and highlight its key features.

[CO1, Unit 2, BTL LOT, Apply]

8. Discuss the need of communication protocols in IOT. Define BLE.

[CO2, Unit 2, BTL LOT, Understand]

9. What is RFID? Give some of the salient features of RFID.

[CO2, Unit 2, BTL LOT, Remember]

10. Explain the layered architecture of the IOT.

[CO2, Unit 2, BTL LOT, Understand]

11. What are the networking protocols in IOT? Give some examples

[CO3, Unit 3, BTL LOT, Apply]

12. What is MQTT? Explain.

[CO3, Unit 3, BTL LOT, Understand]

13. What is XMPP? Enlist some of its salient features.

[CO2, Unit 3, BTL LOT, Remember]

14. Define AMQP. Give its applications.

[CO3, Unit 3, BTL LOT, Understand]

15. What is service discovery protocol in IOT? Give some examples.

[CO3, Unit 3, BTL LOT, Understand]

16. Enlist some advantages of ad-hoc networks.

[CO3, Unit 3, BTL LOT, Remember]

17. What is IOT Platform?

[CO4, Unit 4, BTL LOT, Understand]

18. Describe the core characteristics of an IOT platform.

[CO4, Unit 4, BTL LOT, Understand]

19. Define a virtual sensor.

[CO4, Unit 4, BTL LOT, Remember]

20. What is Node MCU?

[CO4, Unit 4 BTL LOT, Apply]

21. Discuss (i) Interoperability (ii) Edge Analytics

[CO4, Unit 4, BTL LOT, Understand]

22. Enlist at least five IOT data analytics platform.

[CO4, Unit 4, BTL LOT, Understand]

Section B

(No. of Question 11x10= 110 Marks)

23. What is an enabling technology? Describe the key enabling technology in IOT?
[CO1, Unit 1, BTL LOT, Understand]
24. Appraise with the characteristics of IOT in detail.
[CO2, Unit 1, BTL HOT, Analyze]
25. Explain MAC protocols used in WSN and classify them according to their application areas.
[CO2, Unit 2, BTL LOT, Understand]
26. Distinguish (i) Z wave and (ii) Zigbee with their features.
[CO2, Unit 2, BTL HOT, Analyze]
27. Explain (i) WSN (ii) DNS Service Discovery with their application areas.
[CO2, Unit 2, BTL LOT, Understand]
28. Differentiate between MQTT and XMPP protocols. [CO3, Unit 3, BTL HOT, Analyze]
29. Examine the salient features of Message Queue Telemetry Transport Protocol. Also differentiate between HTTP and MQTT. [CO3, Unit 3, BTL HOT, Analyze]
30. Discuss the data dissemination and gathering protocol.
[CO3, Unit 3, BTL LOT, Understand]
31. Formulate the important considerations while selecting an IOT platform.
[CO4, Unit 4, BTL HOT, create]
32. Differentiate between edge, cloud and fog in IOT. [CO4, Unit 4, BTL HOT, Analyze]
33. Write the characteristics, usefulness and core functions of an IOT platform.
[CO4, Unit 4, BTL LOT, Understand]

Section C

(No. of Question 7x 20= 140 Marks)

34. (i) Define IOT Stack. Design the IOT stack with all its 7 layers.
(ii) Briefly explain the IOT challenges.
[CO1, Unit 1, BTL HOT, Create]
35. (i) Investigate some research directions for IOT in modern era technology.
(ii) Compare between Zigbee and Z-Wave in tabular form.
[CO2, Unit 2, BTL HOT, Create]
36. a. Defend the Bluetooth smart energy over the Bluetooth technology.
a. What is IPV6? Support the role of IPV6 in IOT.

[CO2, Unit 2, BTL HOT, Evaluate]

37. a. Evaluate the role of cloud in IOT.

b. Examine the unique constraints and challenges of sensor networks.

[CO3, Unit 3, BTL HOT, Analyze]

38. a. Mention the role of Service Discovery Protocols in IOT. How it is beneficial in real time IOT based project development?

b. Appraise the key features of the Routing Protocol for Low Power and Lossy Networks (RPL)

[CO3, Unit 3, BTL HOT, Evaluate]

39. (a) Define IOT Data visualization? Formulate the major advantages of data visualization platform.

(b) Report and describe at least five measures for IOT data security

[CO4, Unit 4, BTL HOT, Create]

40. Describe the following commercial IOT platforms:

(i) Amazon Web Services IOT Platform

(ii) IBM Watson IOT platform

[CO4, Unit 4, BTL LOT, Analyze]

Summary Sheet:

CO Wise

CO	Q. No	Marks
CO1	1, 2, 3, 4,23,24,34	60
CO2	5, 6, 7, 8, 9, 10, 25, 26, 27, 35, 36	100
CO3	11, 12, 13, 14, 15,16, 28,29,30, 37,38	100
CO4	17, 18, 19, 20, 21, 22, 31, 32, 33, 39, 40	100
Total		360

Unit Wise

Unit	Q. No	Marks
Unit 1	1, 2, 3, 4,23,24,34	60
Unit 2	5, 6, 7, 8, 9, 10, 25, 26, 27, 35, 36	100
Unit 3	11, 12, 13, 14, 15,16, 28,29,30, 37,38	100
Unit 4	17, 18, 19, 20, 21, 22, 31, 32, 33, 39, 40	100
Total		360

Blooms Taxonomy Level (BTL) Wise

BTL	Q. No	Marks
LOT	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21,22, 23,25,27,30, 33	160
HOT	24, 26, 28, 29, 31, 32, 34, 35, 36, 37, 38, 39, 40	200
Total		360

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Reviewed By:

Disclaimer: -This is a Practice Set. The Question in End term examination will differ from the Practice Set. This Practice Set is meant for practice only.