

23U372

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Name: .....

Reg.No: .....

**THIRD SEMESTER B.Voc. DEGREE EXAMINATION, NOVEMBER 2024**

(CBCSS - UG)

(Regular/Supplementary/Improvement)

**CC21U SDC3 CN09 - COMPUTER NETWORK FOR IOT**

(Information Technology - Skill Component Course)

(2021 Admission onwards)

Time : 2.5 Hours

Maximum : 80 Marks

Credit : 4

**Part A** (Short answer questions)

Answer *all* questions. Each question carries 2 marks.

1. Compare wired and wireless connectivity in terms of speed and reliability.
2. Classify different types of processes involved in networking.
3. Analyze the importance of error detection at the data link layer.
4. Explain the role of frequency in wireless LAN transmissions.
5. Define Wireless LAN (WLAN) and explain its key components.
6. Differentiate between a switch and a hub in LAN communication.
7. Compare Zigbee Smart Energy and DASH7 in terms of range and speed.
8. Analyze the importance of routing protocols (RPL, CARP) in IoT.
9. Define RPL and explain its importance in IoT routing.
10. Illustrate the process of securing IoT communication through TLS/DTLS.
11. Define TCP and explain its use in IoT applications.
12. Explain how session resumption works in TLS/DTLS.
13. Analyze the importance of service layer protocols in IoT integration.
14. Analyze the advantages of infrastructure-less networks.
15. Describe the importance of topology management in WSN.

**(Ceiling: 25 Marks)**

**Part B** (Paragraph questions)

Answer *all* questions. Each question carries 5 marks.

16. Illustrate how network topology influences network performance, scalability, and fault tolerance.
17. Investigate the impact of emerging protocols on existing networking standards and practices.

18. Discuss the principles behind Token Ring and Token Bus protocols, comparing them to Ethernet.
19. Evaluate the effectiveness of different network management tools in optimizing network performance.
20. Describe the characteristics and functionalities of PHY and MAC layer protocols used in IoT.
21. Evaluate the challenges and limitations associated with Wireless HART in various environments.
22. Evaluate the role of session layer protocols in managing device communication and state in IoT.
23. Discuss the implications of security vulnerabilities on IoT applications and user privacy.

**(Ceiling: 35 Marks)**

**Part C (Essay questions)**

Answer any *two* questions. Each question carries 10 marks.

24. Explain protocol layering and its significance in networking.
25. Discuss the significance of the Transport, Session, Presentation, and Application layers in ensuring effective communication.
26. Illustrate how DNS and NAT work together to facilitate internet connectivity.
27. Discuss the challenges posed by IPv4 in IoT and how IPv6 addresses these challenges.

**(2 × 10 = 20 Marks)**

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