

Reg. No.

Question Paper Code

13649

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2025

Fourth Semester

Computer Science and Engineering

(Common to Artificial Intelligence and Data Science, Computer Science and Engineering (AIML), Computer Science and Engineering (Cyber Security) & Information Technology)

20CSPW401 - COMPUTER NETWORKS WITH LABORATORY

Regulations - 2020

Duration: 3 Hours

Max. Marks: 100

PART - A (MCQ) (10 × 1 = 10 Marks)

Answer ALL Questions

| | Marks | K-Level | CO |
|---|-------|---------|-----|
| 1. LAN stands for ____. | 1 | K1 | CO1 |
| (a) Long Area Network (b) Local Area Network | | | |
| (c) Local Audible Network (d) Limited Area Network | | | |
| 2. OSI reference model has how many layers? | 1 | K1 | CO1 |
| (a) 4 (b) 5 (c) 7 (d) 3 | | | |
| 3. The technique used to retransmit the data in case of damage is ____. | 1 | K1 | CO2 |
| (a) Stop-and-wait (b) Sliding window | | | |
| (c) Stop-and-wait ARQ (d) Sliding window ARQ | | | |
| 4. The term that is used to define the end of the frame and the beginning of the next frame is called ____. | 1 | K1 | CO2 |
| (a) Byte stuffing (b) Bit stuffing | | | |
| (c) Fixed size framing (d) Variable size framing | | | |
| 5. Which layer in the OSI model is responsible for routing? | 1 | K1 | CO3 |
| (a) Transport (b) Network (c) Data link (d) Physical | | | |
| 6. The maximum size of an IPV4 packet is ____. | 1 | K1 | CO3 |
| (a) 216 bytes (b) 232 bytes (c) 65535 bytes (d) 1500 bytes | | | |
| 7. CSMA stands for ____. | 1 | K1 | CO4 |
| (a) Carrier Sending Multiple Access (b) Carrier Sense Multiple Access | | | |
| (c) Carrier Sense Media Access (d) Carrier Sense Multiple Adaptive | | | |
| 8. Ethernet uses the ____ approach. | 1 | K1 | CO4 |
| (a) CAM (b) CSMA/CD (c) CD (d) CMSA | | | |
| 9. FTP uses port ____ for control commands and port 20 for data transfer. | 1 | K1 | CO5 |
| (a) 21 (b) 23 (c) 69 (d) 445 | | | |
| 10. Which of the following protocols is used for email retrieval? | 1 | K1 | CO6 |
| (a) SMTP (b) FTP (c) POP3 (d) SNMP | | | |

PART - B (12 × 2 = 24 Marks)

Answer ALL Questions

| | | | |
|---|---|----|-----|
| 11. Define computer networks. | 2 | K1 | CO1 |
| 12. Differentiate between LAN, MAN, and WAN. | 2 | K2 | CO1 |
| 13. Define RARP. | 2 | K1 | CO2 |
| 14. Differentiate bytes stuffing and bit stuffing. | 2 | K2 | CO2 |
| 15. Write about forwarding and routing. | 2 | K1 | CO3 |
| 16. Differentiate between classful and classless addressing. | 2 | K2 | CO3 |
| 17. Draw the two types of networks of Bluetooth: piconet and scatter net. | 2 | K1 | CO4 |
| 18. Define Ethernet and compare its types. | 2 | K1 | CO4 |

| | | | |
|---|---|----|-----|
| 19. Discuss process-process communication. | 2 | K2 | CO5 |
| 20. Define Port numbers and its advantages. | 2 | K1 | CO5 |
| 21. State the purpose of DNS. | 2 | K1 | CO6 |
| 22. Distinguish between IMAP and POP. | 2 | K2 | CO6 |

PART - C (6 × 11 = 66 Marks)

Answer ALL Questions

| | | | | | |
|-----------|----|---|----|----|-----|
| 23. | a) | Discuss in detail about the layers of the OSI model and architecture. | 11 | K2 | CO1 |
| OR | | | | | |
| | b) | Describe the types of networks and network topologies. | 11 | K2 | CO1 |
| 24. | a) | Describe the design procedure for Simple, Stop and Wait, Go-Back-N, and Selective-Repeat. | 11 | K2 | CO2 |
| OR | | | | | |
| | b) | Explain in detail about HDLC protocols. | 11 | K2 | CO2 |
| 25. | a) | Explain in detail IPv4 Classful addressing. | 11 | K2 | CO3 |
| OR | | | | | |
| | b) | Discuss in detail about the Network Address Translation. | 11 | K2 | CO3 |
| 26. | a) | Explain MAC sub layer protocol and frame structure of IEEE 802.3. | 11 | K2 | CO4 |
| OR | | | | | |
| | b) | Describe in detail about RIP. | 11 | K2 | CO4 |
| 27. | a) | Describe the working of TCP protocol with the help of a neat diagram. | 11 | K2 | CO5 |
| OR | | | | | |
| | b) | Define UDP. Describe the operation of UDP. | 11 | K2 | CO5 |
| 28. | a) | (i) Write short notes on FTP. | 6 | K2 | CO6 |
| | | (ii) Discuss the advantage of DNS. | 5 | K2 | CO6 |
| OR | | | | | |
| | b) | (i) Discuss about the WWW. | 6 | K2 | CO6 |
| | | (ii) Write short notes on Email. | 5 | K2 | CO6 |