| Question Paper Code | 12714 |
| --- | --- |

# B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2024

Fourth Semester

## Computer Science and Engineering

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

### 20CSPW401 – COMPUTER NETWORKS WITH LABORATORY

Regulations - 2020

Duration: 3 Hours                                                            Max. Marks: 100

### PART - A (10 × 2 = 20 Marks)
Answer ALL Questions

| | | Marks | K-Level | CO |
| --- | --- | --- | --- | --- |
| 1. | Define simplex, half duplex and full duplex. | 2 | K1 | CO1 |
| 2. | Differentiate the LAN, MAN and WAN. | 2 | K2 | CO1 |
| 3. | State the frame format of Ethernet. | 2 | K2 | CO2 |
| 4. | List the mechanism of stop and wait flow control. | 2 | K1 | CO2 |
| 5. | Can you discover the sketch of Ipv6 packet header? | 2 | K1 | CO3 |
| 6. | Identify the class type of the given IP address. 192.0.0.0 to 223.255.255.255. | 2 | K2 | CO3 |
| 7. | Illustrate the metrics used in determining the best path for a routing protocol. | 2 | K2 | CO4 |
| 8. | State distance vector routing. | 2 | K1 | CO4 |
| 9. | List out the three ways of handshake of TCP. | 2 | K1 | CO5 |
| 10. | What example can you infer in quality of service approaches? | 2 | K1 | CO5 |

### PART - B (5 × 13 = 65 Marks)
Answer ALL Questions

| | | | Marks | K-Level | CO |
| --- | --- | --- | --- | --- | --- |
| 11. | a) | Illustrate the following switching techniques in detail. | | | |
| | | i) Circuit Switching | 6 | K2 | CO1 |
| | | ii) Packet Switching | 7 | K2 | CO1 |
| | | **OR** | | | |
| | b) | Describe in detail about OSI Layer architecture with neat diagram. | 13 | K2 | CO1 |
| 12. | a) | Describe in detail about the error control techniques of data link layer. | 13 | K2 | CO2 |
| | | **OR** | | | |
| | b) | Enumerate the following in detail. | | | |
| | | i) Stop and Wait Protocol. | 6 | K2 | CO2 |
| | | ii) Sliding Window Protocol. | 7 | K2 | CO2 |

*K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create*            **12714**

| | | | | |
|---|---|---|---|---|
| 13. | a) | Describe about classful addressing and classless addressing in detail. | 13 | K3 CO3 |
| | | **OR** | | |
| | b) | Discuss in detail about internet control message protocol version 4. | 13 | K2 CO3 |
| 14. | a) | Describe about the Routing algorithms in detail. | 13 | K2 CO4 |
| | | **OR** | | |
| | b) | With the neat sketches generalize the algorithm of link state routing and explain the same with example. | 13 | K2 CO4 |
| 15. | a) | Explain in detail about the three way handshake protocol for connection establishment in TCP. | 13 | K2 CO5 |
| | | **OR** | | |
| | b) | Discuss in detail about UDP Services and UDP datagram format witha neat diagram. | 13 | K2 CO5 |

## PART - C (1× 15 = 15 Marks)

| | | | | |
|---|---|---|---|---|
| 16. | a) | Illustrate how SMTP protocol is used in E-mail applications? | 15 | K3 CO6 |
| | | **OR** | | |
| | b) | Generalize the structure of HTTP server receiver a request message from an HTTP client, how does the server know when all headers have arrived and the body of the message is to follow? | 15 | K3 CO6 |