

III B. Tech II Semester Regular Examinations, July -2023
COMPUTER NETWORKS
(Com. to CSE & IT)

Time: 3 hours

Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**
All Questions Carry Equal Marks

UNIT-I

1. a) Describe the functions of physical and data link layer in OSI model. [7M]
b) Explain the concept of LAN, MAN, WAN and inter network in detail. [7M]
(OR)
2. a) Difference between Guided media and un guided media [7M]
b) With neat sketch explain Twisted pair cables, and explain the performance of Twisted pair cables. [7M]

UNIT-II

3. a) Explain the following error detection techniques i) LRC ii) CRC [7M]
b) What is the importance of variable sized sliding window in TCP? Explain [7M]
(OR)
4. a) Explain about noiseless protocols in data link layer. [7M]
b) What are the types of Transfer Modes in HDLC? Explain [7M]

UNIT-III

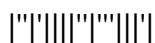
5. a) What are the types of Carrier sense multiple access protocols? Explain [7M]
b) Explain about CSMA/CA and CSMA/CD? also find the differences between them? [7M]
(OR)
6. a) Explain the working of Multiple Access Protocols. [7M]
b) Briefly discuss about switch Ethernet and Gigabit Ethernet? [7M]

UNIT-IV

7. a) What are the general principles of congestion control? Explain [7M]
b) Explain Link State Routing with an example. [7M]
(OR)
8. a) What is Congestion Control? Explain Congestion Control Algorithms? [7M]
b) Explain IPv4 (Internet Protocol) header format. [7M]

UNIT-V

9. a) Discuss in detail about the connection establishment and release in TCP [7M]
b) Difference between UDP and TCP. [7M]
(OR)
10. a) Discuss in brief about HTTP connections. [7M]
b) Explain about TELNET and types of logins? [7M]



III B. Tech II Semester Regular Examinations, July -2023**COMPUTER NETWORKS**

(Com. to CSE & IT)

Time: 3 hours

Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**

All Questions Carry Equal Marks

UNIT-I

1. a) Explain the functions of various layers in TCP/IP reference model. [7M]
- b) What is topology? Describe various types of topology in computer network with example. [7M]

(OR)

2. a) With neat sketch explain Fiber Optical cables and also explain performance. [7M]
- b) Explain about Un-Guided Transmission Media? [7M]

UNIT-II

3. a) Define checksum? What are the steps followed in checksum generator? explain with an example [7M]
- b) With neat sketch explain Point-to-Point Protocol (PPP) phase diagram? [7M]

(OR)

4. a) Write short notes on error detection and error correction codes. [7M]
- b) What are the various ARQ-Retransmission strategies? Explain [7M]

UNIT-III

5. a) Consider the delay of pure ALOHA versus slotted ALOHA at low load. Which one is less? Explain your answer [7M]
- b) What are the collision free protocols? Explain Bit-Map Protocol and Binary Countdown protocols? [7M]

(OR)

6. a) Explain about Channelization protocols of Multiple accesses? [7M]
- b) Explain the Architecture of classic Ethernet and its frame format? [7M]

UNIT-IV

7. a) Write the Comparison between Virtual Circuit and Datagram Networks? [7M]
- b) With an example explain the shortest path routing algorithms used in computer networks. [7M]

(OR)

8. a) Explain the implementation of connection oriented and connection less services of network layer? [7M]
- b) Explain about Address Resolution Protocol? [7M]

UNIT-V

9. a) Draw and explain TCP header. [7M]
- b) Give the format of the UDP segment and TCP segment? Explain when UDP is preferred to TCP. [7M]

(OR)

10. a) Write short notes on Electronic Mail. [7M]
- b) Discuss about DNS name servers. [7M]



III B. Tech II Semester Regular Examinations, July -2023**Computer Networks**

(Com. To CSE & IT)

Time: 3 hours

Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**

All Questions Carry Equal Marks

UNIT-I

1. a) Explain the functionality of each layer in OSI reference model. [7M]
b) Define Fiber optic cable? Explain the types of Fiber optic cable? [7M]
(OR)
2. a) Explain the layers of TCP/IP reference model. [7M]
b) Compare Radio waves and Microwaves in details. [7M]

UNIT-II

3. a) Define Error in data link layer? Discuss about Error Detection and Correction in Data link Layer. [7M]
b) Describe about the Selective-Repeat protocol [7M]
(OR)
4. a) Discuss about CRC algorithm with an example. [7M]
b) Explain the working principle of One-Bit Sliding Window Protocol with example. [7M]

UNIT-III

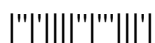
5. a) What is CSMA? Explain about CSMA/CD. [7M]
b) Explain in detail about Standard Ethernet. [7M]
(OR)
6. a) Explain about Pure Aloha and Slotted Aloha. [7M]
b) Describe various multiple access protocols with an example [7M]

UNIT-IV

7. a) Differentiate the Virtual circuit and Datagram networks [7M]
b) Explain the Hierarchical Routing algorithm with an Example. [7M]
(OR)
8. a) Discuss about Leaky Bucket and Token Bucket algorithms. [7M]
b) Define IPv4? Explain the Header Format of IPv4 with neat Diagram. [7M]

UNIT-V

9. a) Explain the TCP segment header format in detail. [7M]
b) Define HTTP? Describe in brief about HTTP request methods. [7M]
(OR)
10. a) What is UDP? Explain the different components of UDP header [7M]
b) What is DNS? What are the services provided by DNS and explain how it works. [7M]



III B. Tech II Semester Regular Examinations, July -2023**Computer Networks**

(Com. To CSE & IT)

Time: 3 hours

Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**

All Questions Carry Equal Marks

UNIT-I

1. a) Compare and contrast the OSI and TCP/IP reference models. [7M]
b) Classify Internet, Intranet and Extranet with applications. [7M]
(OR)
2. a) Define Network topology? List any three network topologies and their Advantages. [7M]
b) Explain in detail about Twisted-pair cable, Coaxial cable in Guided Media [7M]

UNIT-II

3. a) Define Framing. Explain various methods used for framing. [7M]
b) Explain GoBack N protocol with an Example. [7M]
(OR)
4. a) Elaborate on the design issues of Data link layer [7M]
b) Explain in detail about Point to Point protocol. [7M]

UNIT-III

5. a) Discuss in detail about Time-Division Multiplexing and Frequency Division Multiplexing [7M]
b) Write about Standard Ethernet, Fast Ethernet and Gigabit Ethernet. [7M]
(OR)
6. a) What is the purpose of CSMA with Collision Detection? Explain it. [7M]
b) Describe the Polling, Token Passing in Controlled Access in detail. [7M]

UNIT-IV

7. a) Demonstrate Link State Routing algorithm. Also show working algorithm with the help of an example. [7M]
b) Define IPv6? Explain the structure of IPv6 Datagram. [7M]
(OR)
8. a) State and explain the services of network layer. [7M]
b) Explain the following protocols: [7M]
i) ARP ii) DHCP.

UNIT-V

9. a) Describe in detail about Flow control, Error control and Congestion control in TCP. [7M]
b) Write short notes on the following: [7M]
i) TELNET ii) WWW.
(OR)
10. a) Explain UDP services and its applications. [7M]
b) Define E-Mail? Explain about E-Mail architecture with neat Diagram. [7M]

