

**III B. Tech II Semester Regular/Supplementary Examinations, May/June -2024****COMPUTER NETWORKS**

(Com. To CSE-(AIML), CSE(AI), CSE(DS), CSE(AIDS), AIDS, AIML, CSD)

Time: 3 hours

Max. Marks: 70

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

All Questions Carry Equal Marks

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**UNIT-I**

1. a) What is Network? List and explain various types of networks? [7M]
- b) Explain the working principle of twisted pairs and types of 10 Base X and show the variations? [7M]

(OR)

2. a) What is topology? Write about star and mesh topology? [7M]
- b) What is Guided Media? Discuss about Twisted pair with neat sketch? [7M]

**UNIT-II**

3. a) What is framing? Explain its types? [7M]
- b) What is sliding window? Explain its importance and types of sliding window protocols. [7M]

(OR)

4. a) Explain about error detection codes in detail. [7M]
- b) Write about point-to-point protocol (PPP) framing and multiplexing. [7M]

**UNIT-III**

5. a) Discuss about Frequency Division Multiple Access (FDMA)& COMA. [7M]
- b) Explain 10 Gigabit Ethernet? Differentiate it from Gigabit Ethernet [7M]

(OR)

6. a) Discuss the role of polling and Token passing in the implementation of controlled access. [7M]
- b) Write a note on various standards of wired LANS. Give the structure of Ethernet. [7M]

**UNIT-IV**

7. a) Explain about implementation of connection-oriented service and connection less service? [7M]
- b) Write about IPV4, IPV4 Header format, IP address? [7M]

(OR)

8. a) Write about traffic throttling load shedding, jitter control. [7M]
- b) Discuss about the transition from IP addresses: subnets, and internetwork [7M]

**UNIT-V**

9. a) What are the various services and features of TCP? [7M]
- b) Explain in detail about HTTP? [7M]

(OR)

10. a) Compare TCP vs UDP? How to implement the control in TCP. Discuss the importance of windows. [7M]
- b) Write in detail about SNMP? [7M]

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**UNIT-I**

1. a) How do internet services are provided through TCP/IP protocol suite? Explain [7M]  
b) Discuss about bus topology and ring topology along with neat sketch? [7M]  
(OR)
2. a) Explain about OSI Reference model. Mention the functionality of each layer. [7M]  
b) What is Unguided media? Explain about Radio waves in Unguided media? [7M]

**UNIT-II**

3. a) Write about flow control and error control? Write a note on data link layer protocols which ensures they issues. [7M]  
b) Discuss about Go Back N in sliding window protocols? [7M]  
(OR)
4. a) Write about error correction codes? Describe the importance of hamming distance in it. [7M]  
b) Explain about Stop and wait protocol? [7M]

**UNIT-III**

5. a) Explain about Time Division Multiple Access (TDMA) and distinguish statistical and synchronocy TDMA. [7M]  
b) Describe about polling technique and Reservation. [7M]  
(OR)
6. a) Discuss in detail about ALOHA? Calculate its efficiency. [7M]  
b) Explain about Fast Ethernet(100 Mbps)? [7M]

**UNIT-IV**

7. a) Discuss about Leaky bucket and Token bucket algorithms? [7M]  
b) Write in detail about ART? What is the principle of optimality? How it contributes for finding shortest routing? Give example. [7M]  
(OR)
8. a) How do packet and circuit switching are implemented to provide connection oriented service. Explain with neat sketches. [7M]  
b) Compare IPV4 and IPV6? [7M]

**UNIT-V**

9. a) Discuss about congestion control in TCP/IP? [7M]  
b) Explain security of DNS name servers? [7M]  
(OR)
10. a) Explain in detail about UDP and its applications? [7M]  
b) Write about local logging and remote logging? Role of TELNET in it. [7M]

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**UNIT-I**

1. a) Write about TCP/IP reference model. [7M]
- b) Specify the types of wireless media with respect to the weight coverage above ground level and explain. [7M]

(OR)

2. a) Make a comparison of the OSI and TCP/IP reference models? [7M]
- b) Write in detail about guided media? [7M]

**UNIT-II**

3. a) Explain step by step process in CRC with an example? [7M]
- b) Write a note on the usage of check sum, complements and internet check sum. Give examples. [7M]

(OR)

4. a) Write about simplex protocol? Suggest variations on it make suitable for noisy channel. [7M]
- b) Describe the frame format and configuration modes of HDLC. [7M]

**UNIT-III**

5. a) Explain in detail about CSMA/CD? How to ensure controlled access with it? [7M]
- b) Describe the problem of channelization and its solution through multiple accesses? [7M]

(OR)

6. a) Explain in detail about CSMA/CA? [7M]
- b) Write about Standard Ethernet and explain its protocol structure. [7M]

**UNIT-IV**

7. a) Write about Link state routing algorithm? Give example. [7M]
- b) Discuss in Network layer services provided to transport layer. [7M]

(OR)

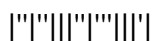
8. a) Explain about congestion prevention policies? [7M]
- b) Describe working principles of algorithms used for internet control protocols. [7M]

**UNIT-V**

9. a) Explain about TCP/IP protocol and its services? [7M]
- b) Discuss about E-mail security? [7M]

(OR)

10. a) What is DNS? Write about DNS messages and registrars? [7M]
- b) Write a note on user datagrams, its protocols and services. [7M]



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**UNIT-I**

1. a) Write about OSI vs TCP/IP reference models? [7M]  
 b) Describe the no of lines required in each topology and discuss their efficiency, [7M]  
 (OR)
2. a) Why OSI models failed when compete with TCP/IP model? Justify [7M]  
 b) Differentiate Guided media and Unguided media [7M]

**UNIT-II**

3. a) Write about various design issues of Data Link Layer. [7M]  
 b) Explain in detail about Simplex protocol for Noisy Channel? [7M]  
 (OR)
4. a) Write a note on various framing structures used in Data Link Layer? [7M]  
 b) Explain about selective repeat-stop and wait protocol in sliding window protocols? [7M]

**UNIT-III**

5. a) Discuss token passing and reservation in Media Access Control? [7M]  
 b) What is Fast Ethernet? Discuss about it differentiate the windows of pune and slotted ALOHA compane its efficiency. [7M]  
 (OR)
6. a) How to perform Media Access Control with CSMA. Explain various persistence protocols. [7M]  
 b) Explain about 10 Gigabit Ethernet? How it is different from standard Ethernet? [7M]

**UNIT-IV**

7. a) Compare Virtual Circuit and Datagram networks? [7M]  
 b) Explain about Distance vector routing algorithm? [7M]  
 (OR)
8. a) Write about store and forward packet switching? How networks are connected. [7M]  
 Write the importance of Turnneling in it.  
 b) What are the various general principles of Congestion control? Explain [7M]

**UNIT-V**

9. a) Write about error control and How TCP? [7M]  
 b) Write the note of caching, resource records in DNS. [7M]  
 (OR)
10. a) Explain the implementation of TCP services and various handshaking protocols used in it. [7M]  
 b) Explain about Electronic mail Architecture with neat sketch? [7M]