

# 15 FOR TEEN

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## COMPUTER NETWORKS MRQS



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- MUST DO TOPICS
- EASY GOING NOTES  
ON IMPORTANT  
TOPICS
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**GREATER NOIDA INSTITUTE OF TECHNOLOGY  
SECOND MID-TERM EXAMINATION B.TECH (CSE/IT 5<sup>TH</sup> SEM.)  
COMPUTER NETWORK**

MM: 30

TIME: 1:30HRS

**Section A**

(2\*5=10)

**Note: Attempt all parts:**

- Q1: (a) Explain the term "Internetworking".  
(b) Name the different routing algorithms.  
(c) Write any two difference between IPv4 and IPv6.  
(d) Explain the different advantages of subnetting.  
(e) Explain the term "Constant Bit Rate" and "Variable Bit Rate".

**Section B**

**Note: Attempt any two questions out of three:**

- Q2: (a) What is Simple Mail Transfer Protocol (SMTP). Explain the working of SMTP with suitable diagram. Also illustrate the different advantages of SMTP at application layer. (7)  
(b) Explain the Client Server model at application layer. (3)

- Q3: (a) Explain the User Datagram Protocol (UDP) at Application layer. (4)  
(b) Explain the following with reference to application layer. (6)

- 1) Addressing
- 2) Multiplexing and Demultiplexing

- Q4: (a) Explain the Leaky Bucket and Token Bucket Congestion Control Algorithms in detail. (5)  
(b) Explain the different classes of IP addressing scheme. (4)

# Mid Term Examination (Oct-2024)

Subject: Computer Network

Subject Code: CIC-307

Time: 1.30Hr

Max. Marks: 30

Note: Attempt Three Question including Question 1 which is Compulsory.

Q1.

- a) Explain PPP connection phases with the help of state Diagram. (2 marks) [CO 1]
- b) Explain the types of frames in HDLC protocol. (3 marks) [CO 2]
- c) What is Pure Aloha and Slotted Aloha? (2 marks) [CO 2]
- d) What is single mode and multi-mode fibre? (3 marks) [CO 1]

Q2.

- a) Explain the function of MAC sub-layer, also explain the advantages and disadvantages of Contention free & Contention based medium accessed strategies. (5 marks) [CO 1]
- b) The even parity hamming code transmitted is 111001101 and the received code is 110001101. Detect and correct the error from the received code. (5 marks) [CO 1]

Q3.

- a) What is Flow control? Explain with diagram the concept of damaged or lost frame in GO-BACK-N ARQ. (5 marks) [CO 2]
- b) If a periodic signal is decomposed in to five sine waves with frequencies of 100, 300, 500, 700, and 900 Hz, what is the bandwidth? Draw the spectrum, assuming all components have a maximum amplitude of 10 v. (5 marks) [CO 2]

Q4. Compare the Following (Any Four) (2.5 marks x 4)

- a) Circuit Switching and Packet Switching. [CO 1]
- b) TCP/IP model and OSI Model. [CO 1]
- c) Guided Media and Unguided Media. [CO 1]
- d) Token Bus and Token Ring. [CO 2]
- e) IEEE 802.3 and IEEE 802.11. [CO 2]

# Mid Term Examination (Nov-2023)

Subject: Computer Network

Subject Code: CIC-307

Time: 1.30Hr

Max. Marks: 30

Note: Attempt Three Question including Question 1 which is Compulsory.

Q1.

- a) Explain various topologies used in Computer networks. (2marks) [CO1]
- b) What is physical address, logical address, Port address in network? (2 marks) [CO1]
- c) Explain the frame format of IEEE 802.3. (2marks) [CO2]
- d) What is Pure Aloha and Slotted Aloha? (2 marks) [CO1]
- e) What is the difference between hubs, switches and routers? (2 marks) [CO1]

Q2.

- a) Discuss the significance of protocols in data communication. Give examples of common network protocols. (5 marks) [CO2]
- b) What is circuit switching, and how does it differ from packet switching? (2 marks) [CO2]
- c) What is the goal of the Transport layer in networking reference models, and Explain common transport layer protocols? (3 marks) [CO2]

Q3.

- a) Explain the difference between flow control and error control in the DLL. (3 marks) [CO1]
- b) Describe the purpose and operation of MAC (Media Access Control) sub layer in the data link layer. (3 marks) [CO1]
- c) Assume the Even Parity Hamming code (111001101) is transmitted and at receiver code received is (110001101). Explain the process of error detection and correction. (4 marks) [CO2]

Q4. Write short note on any four:

- a) FDDI (2.5 marks) [CO2]
- b) Collision Free Protocols (2.5 marks) [CO2]
- c) Go-Back-N ARQ (2.5 marks) [CO1]
- d) Coaxial Cable (2.5 marks) [CO1]
- e) Sliding Window Protocol (2.5 marks) [CO1]

# END TERM EXAMINATION

FIFTH SEMESTER [B.TECH] DECEMBER 2024

Paper Code: CIC-307

Time: 3 Hours

Subject: Computer Networks

Maximum Marks: 75

Note: Attempt any five questions including Q.No. 1 which is compulsory. Select one question from each unit.

- Q1 Attempt any five questions from the following: (5x5=25)
- a) ✓ Differentiate between TCP and UDP.
  - b) ✓ What are major advantages of STP over UTP?
  - c) What are different access methods in broadband ISDN?
  - d) What is the relationship between SONET and SDH?
  - e) ✓ In electronic mail, what is MIME?
  - f) ✓ What is proxy server and how it is related to HTTP?
  - g) ✓ What is network security? Explain the principles of network security.

## UNIT-I

- Q2 a) • What is data communication? What are its four fundamental characteristics? With a neat diagram, explain the components of data communication system. (6.5)
- b) Compute the CRC for a 10 - bit sequence 1010011110 and a divisor of 1010. (6)
- Q3 a) What is a peer to peer process? What are heads and trailers and how do they get added and removed? (6.5)
- b) What is a network adapter? Explain with a block diagram. (6)

## UNIT-II

- Q4 a) ✓ Define stop and wait ARQ protocol Explain the reason for moving from stop and wait ARQ protocol to the GO-BACK-N ARQ protocol. (6.5)
- b) ✓ What are some of the factors that determine whether a communication system is LAN, MAN or WAN? (6)
- Q5 a) Differentiate between ALOHA and slotted ALOHA. (6)
- b) Explain the different causes of transmission impairments during signal transmission through media. (6.5)

## UNIT-III

- Q6 a) ✓ What is the need to change from IPV4 to IPV6? Write IPV6 basic header and describe its field. (6.5)
- b) • Explain the PIM protocol with a suitable example. (6)
- Q7 a) Name different types of HDLC frames and give a brief description of each. (6)
- b) Evaluate maximum bit rate for channel having bandwidth 3100 Hz and S/N ratio of 20dB. (6.5)

## UNIT-IV

- Q8 ✓ Explain the "slow start" mechanism used by TCP to avoid congestion in the network. (6.5)

P.T.O.

**b)** Why transport layer protocols like TCP and UDP are called end to end protocols. What is the difference between them? (6)

- Q9 a) Explain the ethernet with special reference to frame format. (6)  
b) Explain the network layer in internet and the network layer in ATM in detail. (6.5)

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June 2018

SIXTH SEMESTER (B.Tech) MAY-JUNE 2018

Paper Code: ETCS 306

Subject: Computer Networks

(Batch 2013 onwards)

Time: 3 Hours

Maximum Marks: 75

Note: Attempt five questions in all including Q no. 1 which is compulsory.  
Select one question from each unit.

Q1 Attempt the following questions.

- (a) What are two reasons for using layered protocols? What is one possible disadvantage of using layered protocols? (5)
- (b) Compare and contrast CSMA/CD with CSMA/CA. (5)
- (c) What is the relationship between SONET and SDH? (5)
- (d) What is the difference between open-loop congestion control and closed-loop congestion control? (5)
- (e) Are both UDP and IP unreliable to the same degree? Why or why not? (5)

#### UNIT-I

Q2 (a) What are the advantages of fiber optics over copper as a transmission medium? Is there any downside of using fiber optics over copper? (6.25)

(b) What is the remainder obtained by dividing  $x^7 + x^5 + 1$  by the generator polynomial  $x^3 + 1$ ? (6.25)

Q3 (a) What are the disadvantages of using small, fixed-length cells in ATM? (6.25)

(b) Compare and contrast HDLC with PPP. Which one is byte-oriented; which one is bit-oriented? (6.25)

#### UNIT-II

Q4 (a) Compare and contrast the Go-Back-N ARQ Protocol with Selective-Repeat ARQ. (6.25)

(b) Explain why collision is an issue in a random access protocol but not in controlled access or channelizing protocols. (6.25)

Q5 (a) Explain the similarities and differences between bridge and router in detail. (6.25)

(b) What is quality of service and what are general techniques to improve quality of service? (6.25)

#### UNIT-III

Q6 (a) An organization is granted the block 211.17.180.0/24. The administrator wants to create 32 subnets. (6)

- (i) Find the subnet mask.
- (ii) Find the number of addresses in each subnet.
- (iii) Find the first and last addresses in subnet 1.
- (iv) Find the first and last addresses in subnet 32.

(b) Explain distance vector and link state routing protocols. What are the merits and demerits of the both protocols? (6.5)

Q7 (a) In case where reliability is not of primary importance, UDP would make a good transport protocol. Give examples of specific cases. (6)

(b) Compare and contrast IPv4 and IPv6. (6.5)

#### UNIT-IV

Q8 (a) What are the different elements of transport layer protocols? (6)

(b) Discuss the header Panel of UDP. (6.5)

Q9 Discuss the header format of TCP. (12.5)

**END TERM EXAMINATION**

SIXTH SEMESTER [B.TECH] MAY - JUNE 2017

Paper Code: ETCS-306

Subject: Computer Networks

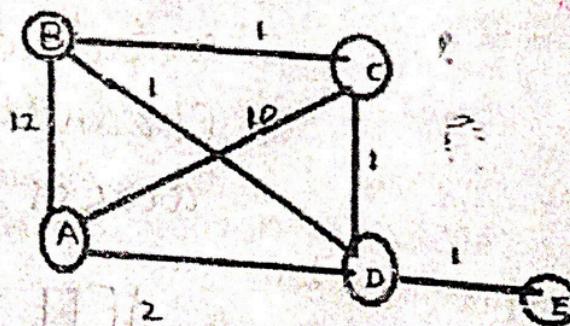
Time: 3 Hours

Maximum Marks: 75

Note: Attempt any five questions including Q.No 1 which is compulsory.

- Q1** (a) How flow control is different from congestion control? (3)  
 (b) Difference between bit rate and baud rate? Explain with example. (3)  
 (c) What is difference between Classful addressing and Classless IP addressing? (4)  
 (d) What are major advantages of STP over UTP? (2.5)  
 (e) Differentiate between Intranet, Internet and internet? (2.5)  
 (f) Difference between baseband transmission and broad band transmission? (2.5)  
 (g) What do you mean by Network Topology? Discuss the problems and benefits of any three topologies? (4.5)  
 (h) What is routing? Differentiate between distance vector routing and link state routing? (3)
- Q2** (a) Calculate the throughput of the pure and slotted ALOHA channel. Which Channel gives better throughput and why? (6)  
 (b) Define Stop and Wait ARQ protocol. Explain the reason for moving from Stop and wait ARQ protocol to the GO-Back-N ARQ protocol? (6.5)
- Q3** (a) Contrast and Compare ISO-OSI and TCP/IP networking models? (6.5)  
 (b) What is the need for adaptive routing algorithms? Explain in details? (6)
- Q4** (a) Explain ATM reference model? Why does ATM use small fixed length cell? What is ATM signaling? (6.5)  
 (b) Write short notes on ISDN? (4)  
 (c) What is Tunneling? (2)

- Q5** (a) Given the network topology below use the Dijkstra's algorithm to compute the shortest path from A to all other nodes. Make sure to show the results of the computations at each step. (6.5)



- Q6** (b) What is collision? How does CSMA/CD detect and correct collision? (6)
- (a) Draw and explain packet format of Transmission control protocol? Explain various steps that are followed in releasing a TCP connection? (8)
- (b) Why transport layer protocols like TCP and UDP are called end-to-end protocols? What is the difference between them? (6.5)
- (a) Explain the Leaky bucket algorithm to control congestion. Explain how the drawbacks of this are overcome in token bucket algorithm? (6.5)
- (b) What is the maximum number of subnets in each case?  
 (i) Class A; mask 255.255.192.0 (6)  
 (ii) Class B; mask 255.255.192.0  
 (iii) Class C; mask 255.255.255.192  
 (iv) Class C; mask 255.255.255.192

# 15 FOR TEEN

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Founder Of 15ForTeen

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