

C. U. SHAH UNIVERSITY

Summer Examination-2020

Subject Name : Computer Networks

Subject Code : 4TE05CNW1

Branch: B.Tech (CE)

Semester : 5

Date : 26/02/2020

Time : 10:30 To 01:30

Marks : 70

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
 - (2) Instructions written on main answer book are strictly to be obeyed.
 - (3) Draw neat diagrams and figures (if necessary) at right places.
 - (4) Assume suitable data if needed.
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Q-1 Attempt the following questions:

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|---|-----------|
| a) What is the purpose of preamble in Ethernet frame? | 01 |
| b) What is end-to-end delay? | 01 |
| c) What is MAC and IP address? | 01 |
| d) What is Multiplexing in computer networks? | 01 |
| e) What is checksum in error detection method? | 01 |
| f) Define tunneling. | 01 |
| g) What is subnet mask? | 01 |
| h) What is virtual circuit network? | 01 |
| i) Define the significance of traffic flooding in networks. | 01 |
| j) What is the Hamming distance? | 01 |
| k) Discuss Half duplex with example. | 01 |
| l) What is framing? | 01 |
| m) Major difference between LAN and WAN. | 01 |
| n) What is Protocol? | 01 |

Attempt any four questions from Q-2 to Q-8

Q-2 Attempt all questions

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|--|-----------|
| (a) Explain the OSI model for networking in brief. How does it differ from TCP/IP model? | 07 |
| (b) List several transmission media for networking. Explain any two media in brief. | 07 |

Q-3 Attempt all questions

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|---|-----------|
| (a) How virtual circuit network differs from circuit switching network? Discuss with example. | 07 |
| (b) What is connection oriented and connectionless service? Explain each with example. | 07 |



- Q-4 Attempt all questions**
- (a) Write short notes on (1) flow control in data link layer (2) Error detection and Correction in data link layer. **07**
- (b) What is cyclic code and explain Cyclic Redundancy Check (CRC) code? **07**
- Q-5 Attempt all questions**
- (a) Explain Link-State routing algorithm. **07**
- (b) Describe Go Back N and Selective Repeat protocol. **07**
- Q-6 Attempt all questions**
- (a) What do you mean by random access protocols? Explain slotted ALOHA in brief. **07**
- (b) Demonstrate socket programming flow for a simple client-server application using TCP. why must the server program be executed before the client program? For the client- server application over UDP, why may the client program be executed before the server program? **07**
- Q-7 Attempt all questions**
- (a) Consider two hosts, A and B, connected by a single link of rate R bps. **07**
Suppose that the two hosts are separated by m meters, and suppose the propagation speed along the link is s meters/sec. Host A is to send a packet of size L bits to Host B.
a). Express the propagation delay.
b). Determine the transmission time of the packet.
c). Ignoring processing and queuing delays, obtain an expression for the end to-end delay.
d). Suppose Host A begins to transmit the packet at time $t= 0$. At time $t=d$ trans, where is the last bit of the packet.
- (b) Write a short note on DNS. **07**
- Q-8 Attempt all questions**
- (a) Explain functionality of Bridge, Hub, Switch, Router, and Gateway. **07**
- (b) Compare and contrast the IPv4 and the IPv6 header fields. Do they have any fields in common? **07**

