



III B.Tech I Sem Supply End Examination, December 2022

Data Communication and Networks

(ECE)

Time: 3 Hours.**Max. Marks: 70**

Note: 1. Question paper consists: Part-A and Part-B.

2. In Part – A, answer all questions which carries 20 marks.

3. In Part – B, answer any one question from each unit.

Each question carries 10 marks and may have a, b as sub questions.

PART- A**(10*2 Marks = 20 Marks)**

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|-------|---|----|-----|-----|
| 1. a) | List various components in a network. | 2M | C01 | BL1 |
| b) | Distinguish between Computer network and internet. | 2M | C01 | BL4 |
| c) | Explain flow control | 2M | C02 | BL2 |
| d) | Briefly discuss about ALOHA. | 2M | C02 | BL6 |
| e) | What is logical addressing. | 2M | C03 | BL1 |
| f) | What are the responsibilities of network layer | 2M | C03 | BL1 |
| g) | What is multiplexing? What are the types of multiplexing. | 2M | C04 | BL1 |
| h) | What is congestion and how it occurs? | 2M | C04 | BL1 |
| i) | What is the use of FTP? | 2M | C05 | BL |
| j) | What is the header format of HTTP reply message? | 2M | C05 | BL |

PART- B**(10*5 Marks = 50 Marks)**

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|---|----|--|----|-----|-----|
| 2 | a) | With a neat diagram explain the OSI reference model in detail?
Explain the functions performed in each layer. | 5M | C01 | BL2 |
| | b) | What are the three different transmission modes? Explain | 5M | C01 | BL1 |

OR

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|---|----|--|----|-----|-----|
| 3 | a) | Explain the classification of data communication networks | 5M | C01 | BL2 |
| | b) | What are the merits and demerits of TCP/IP model over ISO OSI model? | 5M | C01 | BL1 |
| 4 | a) | Explain the following CSMA protocols in details <ul style="list-style-type: none"> • 1-persistent • Mom Persistent • p-persistent | 5M | C02 | BL2 |
| | b) | What are the various Error detection-correction techniques?
Explain any one in detail. | 5M | C02 | BL1 |

OR

- 5 a) Distinguish between Noisy less Channels and Noisy Channels 5M C02 BL4
b) Write a short note on the following terms 5M C02 BL2
- Controlled access
 - Channelization Protocols

- 6 a) Explain Datagram network with a neat diagram. 5M C03 BL2
b) What conclusions can be drawn on IPv6 over IPv4. Draw the datagram format of IPv6. 5M C03 BL1

OR

- 7 a) Discuss how routing control plane fully resides and executes in a routing processor within the router 5M C03 BL6
b) Explain briefly about IP datagram fragmentation. 5M C03 BL2

- 8 a) Describe with examples the three mechanisms by which congestion control is formulated in TCP. 5M C04 BL1
b) Write a short note on 5M C04 BL2
- Round-Trip Time Estimation and Timeout
 - Reliable Data Transfer

OR

- 9 a) Examine that two connections sharing a single hop with infinite buffers 5M C04 BL4
b) List the transport layer's quality of service parameters and explain them. 5M C04 BL1

- 10 a) What is the use of DNS? Explain how it works? 5M C05 BL1
b) Analyze the message format and the message transfer and the underlying protocol involved in the working of the electronic mail. 5M C05 BL4

OR

- 11 a) What evidence can you find for Keeping user state with cookies 5M C05 BL1
b) Explain briefly about web caching. 5M C05 BL2

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