Code No: **R204104V**

R20

Set No. 1

IV B.Tech I Semester Regular Examinations, January – 2024
DATA COMMUNICATIONS
(Common to All Branches except ECE)

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) Explain different types of Networks. [7]
  b) Explain the functions of physical layer and Data link layer in brief. [7]
(OR)
2 a) Discuss about different ways of data representation. [7]
  b) For n devices in a network, what is the number of cable links required for a mesh and ring topology? [7]

UNIT - II

3 a) Discuss about n persistent and non persistent CSMA protocols. [7]
  b) Mention the types of errors.Explain with suitable examples. [7]
(OR)
4 a) What are the steps followed in checksum generator? Explain with suitable example. [6]
  b) Discuss about the following:
   (i) Random Access   (ii) Controlled Access [8]

UNIT - III

5 a) Explain IP addressing method. [7]
  b) Discuss about datagram networks. [7]
(OR)
6 a) Discuss about the following:
   (i) Switching   (ii) Queing [8]
  b) What are the network service models? [6]

UNIT - IV

7 a) The transport layer creates the connection between source and destination. What are the three events involved in the connection? [7]
  b) Discuss about UDP checksum. [7]
(OR)
8 a) Write about Flow Control in TCP. [7]
  b) What is meant by congestion? Why the congestion occurs in network? [7]

UNIT - V

9 a) What is the purpose of Domain Name System? Explain. [7]
  b) Explain the functions of SMTP. [7]
(OR)
10 a) Discuss the TCP connections needed in FTP. [7]
   b) Explain the architecture and services of e-mailing system. [7]

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UNIT - I

1	a)	What are the advantages of distributed processing? Explain.	[7]
	b)	Write about different transmission modes.	[7]

(OR)

2	a)	What are the three criteria necessary for an effective and efficient network? Discuss.	[7]
	b)	Explain the functions of session layer and application layer in brief.	[7]

UNIT - II

3	a)	Compare and contrast noise less and noisy channels.	[7]
	b)	Describe the services offered by MAC sub layers of IEEE 802.11.	[7]

(OR)

4	a)	List out the available error detection methods.Explain any one method with suitable example.	[7]
	b)	What are the different Channelization protocols? Explain any one method.	[7]

UNIT - III

5	a)	Define routing & explain.	[7]
	b)	Compare datagram approach and virtual circuit approach.	[7]

(OR)

6	a)	Explain the two approaches of packet switching techniques.	[7]
	b)	What is ICMP? Explain its significance. What are the characteristics?	[7]

UNIT - IV

7	a)	What is meant by segmentation? Discuss about UDP segment structure.	[7]
	b)	Write about Selective Repeat protocol.	[7]

(OR)

8	a)	Discuss about principles of reliable data transfer.	[7]
	b)	Explain about congestion control.	[7]

UNIT - V

9	a)	What is the significance of FTP command? What are the different FTP commands?	[7]
	b)	Write short notes on principles of networking applications.	[7]

(OR)

10	a)	Explain about HTTP.	[7]
	b)	Write down the three types of WWW documents.	[7]

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Set No. 3

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DATA COMMUNICATIONS
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Time: 3 hours   **Max. Marks: 70**

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

UNIT - I
1	a)	What are the features provided by layering? Explain.	[7]
	b)	Explain different Data flow directions.	[7]

(OR)

2	a)	Explain the layers of TCP/IP model.	[7]
	b)	Discuss in detail about the IEEE 802.11 standard.	[7]

UNIT - II
3	a)	Explain about flow control in data link layer.	[7]
	b)	Distinguish between Pure and slotted ALOHA.	[7]

(OR)

4	a)	What are the services provided by the link layer? Discuss.	[7]
	b)	What is framing and explain different types of framings?	[7]

UNIT - III
5	a)	What are the different types of internet addressing? Discuss.	[7]
	b)	With neat sketch explain VCN.	[7]

(OR)

6	a)	Write about Go-Back-N protocol.	[7]
	b)	Write short notes on IPv4.	[7]

UNIT - IV
7	a)	What are the two multiplexing strategies used in transport layer? Discuss.	[7]
	b)	Write about TCP segment.	[7]

(OR)

8	a)	What is the difference between network layer delivery and the transport Layer delivery?	[7]
	b)	Explain the relationship between transport and network layers.	[7]

UNIT - V
9	a)	How do processes communicate? Explain.	[7]
	b)	Discuss about DNS records and messages.	[7]

(OR)

10	a)	What are the advantages of allowing persistent TCP connections in HTTP? Discuss.	[7]
	b)	How does the user get E-mail from the message transfer agent? Discuss.	[7]

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Set No. 4

IV B.Tech I Semester Regular Examinations, January – 2024
DATA COMMUNICATIONS
(Common to All Branches except ECE)

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

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

UNIT - I

1 a) What are the components of Data communication? Explain.   [7]
  b) Explain different types of Networks.   [7]

(OR)

2 a) Write about Protocol and Standards.   [7]
  b) Explain the functions of network layer and transport layer in brief.   [7]

UNIT - II

3 a) What are the responsibilities of data link layer?   [7]
  b) Explain about HDLC Configurations.   [7]

(OR)

4 a) What are the merits and demerits ARQ over Forward Error Correction?   [7]
  b) Discuss about the frame structure of IEEE 802.11.   [7]

UNIT - III

5 a) What is the control plane in routing? Explain.   [7]
  b) Write short notes on IPv6.   [7]

(OR)

6 a) Distinguish between Circuit Switching and packet switching.   [7]
  b) What are the components inside router? Explain their functions.   [7]

UNIT - IV

7 a) What are the services provided by Transport layer? Discuss.   [7]
  b) Discuss the different approaches to Congestion control.   [7]

(OR)

8 a) Differentiate between UDP and TCP.   [7]
  b) Explain connection establishment and connection release in transport layer. [7]

UNIT - V

9 a) What is SMTP? What is SMTP used for? Discuss.   [7]
  b) Explain about Electronic mail.   [7]

(OR)

10 a) How to use FTP list command? What is FTP command syntax?   [7]
   b) What is an Internet Directory service? Explain in detail.   [7]

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