Code No: **R1641043** **R16** **Set No. 1**

IV B.Tech I Semester Regular Examinations, October/November - 2019

COMPUTER NETWORKS

(Common to Electronics & Communication Engineering and Electronics & Instrumentation Engineering)

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

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any FOUR questions from Part-B
*****

PART–A *(14 Marks)*

1.	a)	What are the responsibilities of physical layer?	[3]
	b)	What is the significance of Multiplexing?	[2]
	c)	What is framing? List different framing technique.	[2]
	d)	Draw the graph for throughput versus offered traffic for ALOHA systems.	[3]
	e)	What is optimality principle?	[2]
	f)	Name the transport layer protocols.	[2]

PART–B *(4x14 = 56 Marks)*

2.	a)	What is layered architecture? Explain its design issue?	[8]
	b)	Describe WAN, LAN and MAN.	[6]
3.	a)	Explain any two guided transmission media.	[8]
	b)	Explain code division multiplexing.	[6]
4.	a)	Explain different error correcting codes.	[7]
	b)	Explain a simplex stop and wait protocol for an error free channel with pseudo code.	[7]
5.	a)	Explain different CSMA protocols.	[6]
	b)	What is Ethernet? Explain classic Ethernet physical layer and its MAC sub layer protocol.	[8]
6.	a)	Discuss the Network layer design issues.	[4]
	b)	Explain Flooding and Hierarchical routing algorithms.	[10]
7.	a)	Explain about DNS.	[7]
	b)	What is E-mail? Explain its architecture and services.	[7]

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

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any FOUR questions from Part-B
*****

PART–A *(14 Marks)*

1.	a)	What is point-to-point link transmission?	[2]
	b)	Define Nyquist's theorem.	[2]
	c)	Define error control and flow control.	[3]
	d)	What fast Ethernet and Gigabit Ethernet?	[3]
	e)	What is sink tree?	[2]
	f)	What is a socket address?	[2]

PART–B *(4x14 = 56 Marks)*

2.	a)	What are the responsibilities of session layer and presentation layers?	[4]
	b)	Describe the network types, topologies and switching methods.	[10]
3.	a)	What are the different variations of unshielded twisted pair (UTP) cables? Give their applications.	[8]
	b)	Explain Frequency division multiplexing.	[6]
4.	a)	With examples, explain error detection using CRC and check sum.	[7]
	b)	Explain A Utopian simplex protocol with pseudo code.	[7]
5.	a)	With neat sketch, explain the architecture of IEEE802.11 WLAN. What are the advantages of WLAN?	[6]
	b)	What are Wireless LANS? What is its standard and explain its MAC Sub layer protocol.	[8]
6.	a)	Explain shortest path routing algorithm.	[7]
	b)	What is congestion control? Explain different approaches to congestion control.	[7]
7.	a)	Explain about TCP segment header.	[7]
	b)	Explain about E-mail message transfer and final delivery.	[7]

Code No: **R1641043** **R16** **Set No. 3**

IV B.Tech I Semester Regular Examinations, October/November - 2019

COMPUTER NETWORKS

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

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any FOUR questions from Part-B
*****

PART–A *(14 Marks)*

1. a) What is the significance of layered architecture? [3]
   b) Define baseband and passband signals. [2]
   c) Define Hamming distance. [2]
   d) What is MAC sublayer? [2]
   e) What is congestion? [3]
   f) What is a port number? Give ranges of different port numbers. [2]

PART–B *(4x14 = 56 Marks)*

2. a) Explain TCP/IP reference model. [8]
   b) Compare the OSI and TCP/IP reference model. [6]

3. a) What is digital modulation? Explain different pass band transmission techniques. [8]
   b) Describe data link design issues. [6]

4. a) What is the remainder obtained by dividing x^7+x^5+1 by the generator polynomial x^3+1? [6]
   b) Explain Go-Back-N data link layer protocol with pseudo code. [8]

5. a) What is channel allocation problem? Explain assumptions for dynamic channel allocation. [6]
   b) Explain 802.11 architecture and protocol stack. [8]

6. a) Compare virtual circuits and datagram networks. [4]
   b) Explain Link State Routing algorithm. [10]

7. a) What is TCP? Explain connection management of TCP. [7]
   b) Explain E-mail user agent and message formats. [7]

Code No: **R1641043** **R16** **Set No. 4**

IV B.Tech I Semester Regular Examinations, October/November - 2019

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

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any FOUR questions from Part-B
*****

PART–A *(14 Marks)*

1. a) What are two reasons for using layered protocols? What is one possible disadvantage of using layered protocol? [3]
   b) Define the bandwidth of a signal. [2]
   c) List the services provided by Data link layer. [2]
   d) Draw the graph for the channel utilization versus load for various random access protocols. [3]
   e) What are the different congestion control algorithms? [2]
   f) List the limitations of SMTP. [2]

PART–B *(4x14 = 56 Marks)*

2. a) Compare different network topologies. [6]
   b) Explain OSI reference model, with neat sketch. [8]

3. a) What is multiplexing? Explain Time division multiplexing. [6]
   b) Explain elementary data link protocols. [8]

4. a) What is Framing? Explain different framing techniques. [8]
   b) Explain Selective Repeat data link layer protocol with pseudo code. [6]

5. a) Explain different ALOHA Protocols and compare them. [7]
   b) Discuss about the 802.11 MAC sub layer protocol. [7]

6. a) What is the significance of Routing algorithm? Explain Distance Vector Routing algorithm. [8]
   b) Explain admission control and load shedding algorithms. [6]

7. a) Explain UDP header format? Compare UDP and TCP. [8]
   b) Explain DNS Name Space and Name Records. [6]