Code No: R203205K **R20** SET -1

III B. Tech II Semester Regular Examinations, July -2023
COMPUTER NETWORKS
(Com. to CSE & IT)

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)	Describe the functions of physical and data link layer in OSI model.	[7M]
	b)	Explain the concept of LAN, MAN, WAN and inter network in detail.	[7M]
		(OR)	
2.	a)	Difference between Guided media and un guided media	[7M]
	b)	With neat sketch explain Twisted pair cables, and explain the performance of Twisted pair cables.	[7M]

UNIT-II

3.	a)	Explain the following error detection techniques i) LRC ii) CRC	[7M]
	b)	What is the importance of variable sized sliding window in TCP? Explain	[7M]
		(OR)	
4.	a)	Explain about noiseless protocols in data link layer.	[7M]
	b)	What are the types of Transfer Modes in HDLC? Explain	[7M]

UNIT-III

5.	a)	What are the types of Carrier sense multiple access protocols? Explain	[7M]
	b)	Explain about CSMA/CA and CSMA/CD? also find the differences between them?	[7M]
		(OR)	
6.	a)	Explain the working of Multiple Access Protocols.	[7M]
	b)	Briefly discuss about switch Ethernet and Gigabit Ethernet?	[7M]

UNIT-IV

7.	a)	What are the general principles of congestion control? Explain	[7M]
	b)	Explain Link State Routing with an example.	[7M]
		(OR)	
8.	a)	What is Congestion Control? Explain Congestion Control Algorithms?	[7M]
	b)	Explain IPv4 (Internet Protocol) header format.	[7M]

UNIT-V

9.	a)	Discuss in detail about the connection establishment and release in TCP	[7M]
	b)	Difference between UDP and TCP.	[7M]
		(OR)	
10.	a)	Discuss in brief about HTTP connections.	[7M]
	b)	Explain about TELNET and types of logins?	[7M]

Code No: R203205K **R20** SET -2

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COMPUTER NETWORKS
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Time: 3 hours Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**
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*****

UNIT-I

1.	a)	Explain the functions of various layers in TCP/IP reference model.	[7M]
	b)	What is topology? Describe various types of topology in computer network with example.	[7M]
		(OR)	
2.	a)	With neat sketch explain Fiber Optical cables and also explain performance.	[7M]
	b)	Explain about Un-Guided Transmission Media?	[7M]
		UNIT-II	
3.	a)	Define checksum? What are the steps followed in checksum generator? explain with an example	[7M]
	b)	With neat sketch explain Point-to-Point Protocol (PPP) phase diagram?	[7M]
		(OR)	
4.	a)	Write short notes on error detection and error correction codes.	[7M]
	b)	What are the various ARQ-Retransmission strategies? Explain	[7M]
		UNIT-III	
5.	a)	Consider the delay of pure ALOHA versus slotted ALOHA at low load. Which one is less? Explain your answer	[7M]
	b)	What are the collision free protocols? Explain Bit-Map Protocol and Binary Countdown protocols?	[7M]
		(OR)	
6.	a)	Explain about Channelization protocols of Multiple accesses?	[7M]
	b)	Explain the Architecture of classic Ethernet and its frame format?	[7M]
		UNIT-IV	
7.	a)	Write the Comparison between Virtual Circuit and Datagram Networks?	[7M]
	b)	With an example explain the shortest path routing algorithms used in computer networks.	[7M]
		(OR)	
8.	a)	Explain the implementation of connection oriented and connection less services of network layer?	[7M]
	b)	Explain about Address Resolution Protocol?	[7M]
		UNIT-V	
9.	a)	Draw and explain TCP header.	[7M]
	b)	Give the format of the UDP segment and TCP segment? Explain when UDP is preferred to TCP.	[7M]
		(OR)	
10.	a)	Write short notes on Electronic Mail.	[7M]
	b)	Discuss about DNS name servers.	[7M]

Code No: R203205K **R20** SET -3

III B. Tech II Semester Regular Examinations, July -2023
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Answer any **FIVE** Questions **ONE** Question from **Each unit**
All Questions Carry Equal Marks
*****

UNIT-I

1.	a)	Explain the functionality of each layer in OSI reference model.	[7M]
	b)	Define Fiber optic cable? Explain the types of Fiber optic cable?	[7M]
		(OR)	
2.	a)	Explain the layers of TCP/IP reference model.	[7M]
	b)	Compare Radio waves and Microwaves in details.	[7M]

UNIT-II

3.	a)	Define Error in data link layer? Discuss about Error Detection and Correction in Data link Layer.	[7M]
	b)	Describe about the Selective-Repeat protocol	[7M]
		(OR)	
4.	a)	Discuss about CRC algorithm with an example.	[7M]
	b)	Explain the working principle of One-Bit Sliding Window Protocol with example.	[7M]

UNIT-III

5.	a)	What is CSMA? Explain about CSMA/CD.	[7M]
	b)	Explain in detail about Standard Ethernet.	[7M]
		(OR)	
6.	a)	Explain about Pure Aloha and Slotted Aloha.	[7M]
	b)	Describe various multiple access protocols with an example	[7M]

UNIT-IV

7.	a)	Differentiate the Virtual circuit and Datagram networks	[7M]
	b)	Explain the Hierarchical Routing algorithm with an Example.	[7M]
		(OR)	
8.	a)	Discuss about Leaky Bucket and Token Bucket algorithms.	[7M]
	b)	Define IPv4? Explain the Header Format of IPv4 with neat Diagram.	[7M]

UNIT-V

9.	a)	Explain the TCP segment header format in detail.	[7M]
	b)	Define HTTP? Describe in brief about HTTP request methods.	[7M]
		(OR)	
10.	a)	What is UDP? Explain the different components of UDP header	[7M]
	b)	What is DNS? What are the services provided by DNS and explain how it works.	[7M]

Code No: R203205K **R20** SET -4

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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)	Compare and contrast the OSI and TCP/IP reference models.	[7M]
	b)	Classify Internet, Intranet and Extranet with applications.	[7M]
		(OR)	
2.	a)	Define Network topology? List any three network topologies and their Advantages.	[7M]
	b)	Explain in detail about Twisted-pair cable, Coaxial cable in Guided Media	[7M]

UNIT-II

3.	a)	Define Framing. Explain various methods used for framing.	[7M]
	b)	Explain GoBack N protocol with an Example.	[7M]
		(OR)	
4.	a)	Elaborate on the design issues of Data link layer	[7M]
	b)	Explain in detail about Point to Point protocol.	[7M]

UNIT-III

5.	a)	Discuss in detail about Time–Division Multiplexing and Frequency Division Multiplexing	[7M]
	b)	Write about Standard Ethernet, Fast Ethernet and Gigabit Ethernet.	[7M]
		(OR)	
6.	a)	What is the purpose of CSMA with Collision Detection? Explain it.	[7M]
	b)	Describe the Polling, Token Passing in Controlled Access in detail.	[7M]

UNIT-IV

7.	a)	Demonstrate Link State Routing algorithm. Also show working algorithm with the help of an example.	[7M]
	b)	Define IPv6? Explain the structure of IPv6 Datagram.	[7M]
		(OR)	
8.	a)	State and explain the services of network layer.	[7M]
	b)	Explain the following protocols: i) ARP ii) DHCP.	[7M]

UNIT-V

9.	a)	Describe in detail about Flow control, Error control and Congestion control in TCP.	[7M]
	b)	Write short notes on the following: i) TELNET ii) WWW.	[7M]
		(OR)	
10.	a)	Explain UDP services and its applications.	[7M]
	b)	Define E-Mail? Explain about E-Mail architecture with neat Diagram.	[7M]