Code No: R2031051 **R20** SET - 1

III B. Tech I Semester Regular Examinations, Dec/Jan -2022-23
COMPUTER NETWORKS
(Common 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) Compare and contrast the OSI and TCP/IP reference models. [7M]
   b) Explain about Fiber optic cable? What are the types of Fiber optic cable? [7M]

(OR)

2. a) What is Network topology? List any 3 network topologies. [7M]
   b) Explain the functionality of each layer in OSI reference model. [7M]

UNIT-II

3. a) What are the different types of error detection methods? Explain the CRC error detection technique using generator polynomial x^4+x^3+1 and data 11100011. [7M]
   b) Explain about The Data Link Layer Frame and Frame Fields. [7M]

(OR)

4. a) What is meant by Error in data link layer? Discuss about Error Detection and Correction in Data link Layer. [7M]
   b) Discuss about working Principle of a One-Bit Sliding Window Protocol with example. [7M]

UNIT-III

5. a) Write in detail on Time–Division Multiplexing and Frequency-Division Multiplexing. [7M]
   b) Explain the Code Division Multiple Access. [7M]

(OR)

6. a) What is the purpose of CSMA with Collision Detection? Explain it. [7M]
   b) Write about Standard Ethernet, Fast Ethernet and Gigabit Ethernet. [7M]

UNIT-IV

7. a) Describe the problem and solutions associated with Distance vector routing. [7M]
   b) Draw the IPV4 Header format and explain the fields. [7M]

(OR)

8. a) Explain any three Congestion prevention policies. [7M]
   b) Explain the following protocols: [7M]
   i) ARP ii) DHCP.

UNIT-V

9. a) Illustrate the connection establishment and release in TCP. [7M]
   b) What is DNS? What are the services provided by DNS and explain how it works. [7M]

(OR)

10. a) Explain about UDP services and its applications. [7M]
    b) Write short notes on the following: [7M]
    i) SNMP ii) WWW.

Code No: R2031051 **R20** SET - 2

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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 layers of TCP/IP reference model.	[7M]
	b)	Differentiate Radio waves and Microwaves in details.	[7M]
		(OR)	
2.	a)	Explain about various transmission media in physical layer with a neat sketch.	[7M]
	b)	Discuss the similarities and differences between OSI and TCP/IP reference models.	[7M]

UNIT-II

3.	a)	Elaborate on the design issues of Data link layer.	[7M]
	b)	Explain Error Detection Techniques in Data link Layer.	[7M]
		(OR)	
4.	a)	With an example, explain GoBack N protocol.	[7M]
	b)	Draw the frame format of HDLC and explain its configuration and transfer modes.	[7M]

UNIT-III

5.	a)	What is the purpose of CSMA with Collision Prevention? Explain it.	[7M]
	b)	Explain about FDMA and TDMA.	[7M]
		(OR)	
6.	a)	Explain the various ALOHA protocols in details.	[7M]
	b)	Write and explain about various multiple access protocols.	[7M]

UNIT-IV

7.	a)	Describe congestion control in datagram subnets.	[7M]
	b)	Explain the Link State Routing protocol with an example.	[7M]
		(OR)	
8.	a)	Explain about Class full addressing and CIDR.	[7M]
	b)	What is Routing Algorithm? Briefly discuss Adaptive Routing Algorithms and Non – Adaptive Routing Algorithms.	[7M]

UNIT-V

9.	a)	Describe in detail about TCP segment header and connection Establishment.	[7M]
	b)	What is 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 electronic mail? Describe in brief about different agents involved in ending and receiving e-mail.	[7M]

Code No: R2031051 **R20** SET - 3

III B. Tech I Semester Regular Examinations, Dec/Jan -2022-23
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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)	Describe any two Guided transmission media options.	[7M]
	b)	Explain the different layers in OSI model.	[7M]
		(OR)	
2.	a)	Briefly discuss about TCP/IP protocol suite.	[7M]
	b)	Summarize the classification of Network types.	[7M]

UNIT-II

3.	a)	Define Framing. Explain various methods used for framing.	[7M]
	b)	Explain the working of unrestricted simplex protocol, what are the restrictions placed on other protocols?	[7M]
		(OR)	
4.	a)	Derive the sending and receiver window sizes for Go Back N and Selective-Repeat protocols.	[7M]
	b)	Explain the frame format and working of HDLC protocol.	[7M]

UNIT-III

5.	a)	Explain ALOHA in detail.	[7M]
	b)	What is CSMA? Explain about CSMA/CA?	[7M]
		(OR)	
6.	a)	Explain about the CDMA&TDMA techniques.	[7M]
	b)	Explain in detail about Standard Ethernet.	[7M]

UNIT-IV

7.	a)	What is the role of different layers in controlling the congestion?	[7M]
	b)	Explain the Hierarchical Routing algorithm and discuss its advantages and limitations.	[7M]
		(OR)	
8.	a)	What are the motivation factors for IPV6? Explain about the IPV6 address structure.	[7M]
	b)	Explain Leaky Bucket and Token Bucket algorithms.	[7M]

UNIT-V

9.	a)	Discuss in detail about the connection establishment and release in TCP.	[7M]
	b)	Write about HTTP and SNMP.	[7M]
		(OR)	
10.	a)	Explain briefly about the Architecture of WWW.	[7M]
	b)	Write the short notes on E-Mail architecture.	[7M]

Code No: R2031051 **R20** SET - 4

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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)	Differentiate LAN, MAN and WAN network topologies.	[7M]
	b)	Explain about Transport layer and Presentation layer with neat diagrams.	[7M]
		(OR)	
2.	a)	Explain Un-Guided transmission media option.	[7M]
	b)	Classify Internet, Intranet and Extranet with applications.	[7M]

UNIT-II

3.	a)	Discuss various methods for implementing Framing in Data Link Layer.	[7M]
	b)	Describe about the Selective-Repeat protocol.	[7M]
		(OR)	
4.	a)	Explain in detail about Point to Point protocol.	[7M]
	b)	Write in detail about CRC algorithm with an example.	[7M]

UNIT-III

5.	a)	What is CSMA? Explain about CSMA/CD.	[7M]
	b)	Discuss briefly about the MAC layers in 802.11standard.	[7M]
		(OR)	
6.	a)	Explain about Pure Aloha and Slotted Aloha.	[7M]
	b)	Briefly discuss the different Channelization techniques.	[7M]

UNIT-IV

7.	a)	Explain Distance vector multicast routing protocol (DVMRP) with example.	[7M]
	b)	Differentiate the Virtual circuit and Datagram networks.	[7M]
		(OR)	
8.	a)	Discuss the different Congestion control policies.	[7M]
	b)	What are the various classes of IPV4 addressing? Give example for each.	[7M]

UNIT-V

9.	a)	Explain the TCP segment header format in detail.	[7M]
	b)	Write about DNS messages and Resource records.	[7M]
		(OR)	
10.	a)	Write about Flow control, Error control and Congestion control in TCP.	[7M]
	b)	Describe briefly about the HTTP operational model.	[7M]