Code No: R1632051 **R16** SET - 1

III B. Tech II Semester Regular Examinations, April/May - 2019

COMPUTER NETWORKS

(**Common to** Computer Science and Engineering and Information Technology)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

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PART –A

1.	a)	Explain about WAN.	[2M]
	b)	What is the difference between Broadcasting and Multicasting?	[2M]
	c)	Explain the functions of Data link layer.	[2M]
	d)	With an example explain the process of Error detection using Hamming code.	[3M]
	e)	Explain the concept involved in Flooding algorithm.	[3M]
	f)	What is the significance of DNS?	[2M]

PART -B

2.	a)	Explain the functions of various layers in ISO-OSI reference model.	[7M]
	b)	Explain the different topologies of the network.	[7M]
3.	a)	With neat sketch explain Twisted pair cables, connectors of twisted pair cables with neat graph explain the performance of Twisted pair cables.	[7M]
	b)	Compare and contrast synchronous time division multiplexing and statistical time division multiplexing.	[7M]
4.	a)	What is the need of Flow control? Explain the common approaches for flow control in data link layer.	[7M]
	b)	Explain the following error detection techniques i) LRC ii) CRC	[7M]
5.	a)	Explain the working of Multiple Access Protocols.	[7M]
	b)	Explain various classes of IEEE 802.X Standard Ethernet.	[7M]
6.	a)	With an example explain the shortest path routing algorithms used in computer networks.	[7M]
	b)	What are the general principles of congestion control? Explain.	[7M]
7.	a)	Write short notes on Electronic Mail.	[7M]
	b)	Discuss in detail about the connection establishment and release in TCP.	[7M]

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2. Answer **ALL** the question in **Part-A**
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PART –A

1.	a)	Explain about MAN.	[2M]
	b)	Explain the characteristics of twisted pair cable.	[2M]
	c)	List out the advantages and disadvantages of circuit switching.	[2M]
	d)	With neat sketch explain the basic concept involved in Elementary Protocol: stop and wait.	[3M]
	e)	Define Congestion. What are the general Principles of Congestion?	[3M]
	f)	Explain the WWW.	[2M]

PART -B

2.	a)	Compare the WAN, LAN and MAN topologies.	[7M]
	b)	Define Encapsulation and Peer to Peer communication in the layered architecture.	[7M]
3.	a)	Explain the frequency division multiplexing with a suitable example.	[7M]
	b)	Give brief explanation about copper cables with neat sketch.	[7M]
4.	a)	Describe the stop and wait protocol with neat sketch.	[7M]
	b)	What is the significance of data link layer? Explain the design issues of data link layer.	[7M]
5.	a)	Compare the throughput of pure aloha and slotted aloha.	[7M]
	b)	Explain about the 802.11 Architecture.	[7M]
6.	a)	Explain Distance Vector routing algorithm with an example.	[7M]
	b)	What are the differences between Static Routing Algorithm and Dynamic Routing Algorithm?	[7M]
7.	a)	Explain TCP Connection management Finite State Machine. Explain all states in it.	[7M]
	b)	Explain the structure of UDP Header format.	[7M]

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Code No: R1632051 **R16** SET - 3

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2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

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PART –A

1. a) Give advantages of a client server system using LAN over the big time sharing system. [2M]
   b) Discuss briefly about the multilevel multiplexing. [2M]
   c) What is Piggybacking? Explain the advantage of it. [2M]
   d) What is slotted ALOHA? Mention its advantages. [3M]
   e) What is a Choke packet? How do they help in congestion control? [3M]
   f) Write short notes on E-Mail. [2M]

PART -B

2. a) Differentiate OSI reference model with the TCP/IP reference model. [7M]
   b) Explain the functions of various layers in ISO-OSI reference model. [7M]

3. a) Discuss about unguided transmission media. [7M]
   b) Explain about Time division Multiplexing with example. [7M]

4. a) Explain flow control mechanism using Sliding window protocol. [7M]
   b) 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]

5. a) Explain in detail the operation of pure ALOHA and slotted ALOHA. [7M]
   b) Discuss in brief the MAC frame structure for IEEE 802.3 [7M]

6. a) Illustrate Routing of Packets within Virtual Circuit Subnet. [7M]
   b) Explain the Dijkstra's Shortest Path Routing Algorithm with an example. [7M]

7. a) Compare and Contrast the UDP header and the TCP header. [7M]
   b) How DNS service maps domain names to IP addresses. [7M]

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COMPUTER NETWORKS

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Time: 3 hours Max. Marks: 70

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2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

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PART –A

1.	a)	What are the advantages of and draw backs of mesh topology.	[2M]
	b)	Write about the twisted coaxial cables.	[2M]
	c)	What are the design issues of Data Link layer?	[2M]
	d)	Differentiate the connectionless and connection oriented networks.	[3M]
	e)	What is the difference between Fixed framing and variable length framing?	[3M]
	f)	Write the application layer paradigms.	[2M]

PART -B

2.	a)	Explain different Layers and their functionalities in TCP/IP Model.	[7M]
	b)	Discuss in detail about the LAN and WAN.	[7M]
3.	a)	Explain briefly about the applications of FDM.	[7M]
	b)	Explain in detail about the synchronous time division multiplexing.	[7M]
4.	a)	Explain in detail about the sliding window protocol using Selective Repeat.	[7M]
	b)	Explain in detail about the sliding window protocol using Go-Back-NA.	[7M]
5.	a)	Discuss in brief the MAC frame structure for 805.11 Frame Structure-Services.	[7M]
	b)	Explain the fields in the 802.11 Frame Structure.	[7M]
6.	a)	Explain in detail about the Efficiency and Delay in Datagram Networks.	[7M]
	b)	Differentiate the open loop congestion control and closed loop congestion control.	[7M]
7.	a)	What is a URL and explain about its components.	[7M]
	b)	Write a short note on Remote Procedure Call.	[7M]

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