PREVIOUS QUESTION PAPERS

R16

Code No: 135AE

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, November/December - 2018
DATA COMMUNICATION AND COMPUTER NETWORKS
(Common to CSE, IT)

Time: 3 hours **Max. Marks: 75**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

(25 Marks)

1.a)	List various components in a network.	[2]
b)	List and define different network topologies.	[3]
c)	Define bit stuffing and character stuffing.	[2]
d)	Briefly discuss about ALOHA.	[3]
e)	Why the class C is most commonly used Network class?	[2]
f)	Discuss how address mapping is performed.	[3]
g)	Mention Congestion Prevention Policies and how does it work.	[2]
h)	Flow control and Error control both are properties of Transport Layer and Data Link Layer. What you think is it duplicity of properties in both layer or is it ok? Comment.	[3]
i)	Define SNMP protocol.	[2]
j)	Discuss the properties of file transfer protocol.	[3]

PART - B

(50 Marks)

2. With a neat diagram explain the OSI reference model in detail? Explain the functions performed in each layer. [10]

OR

3. What is multiplexing? Explain in detail about various types of multiplexing. [10]

4. Describe various error detection and correction technique. The generator polynomial is x^3+x+1. A sender want to send data 1001. Generate CRC code. Also describe error checking process if 3rd bit is inverted from the left. [10]

OR

5. What is high level data link control (HDLC)? Explain HDLC frame format in detail. [10]

6. What is classful addressing? Discuss class A, class B, class C, class D, class E address with its range in decimal dotted notation and example. [10]

OR

7. Give an example to explain any one of the multicasting routing algorithm. [10]

8. Discuss the transport layer service primitives. What do you understand by 3 way hand shake Technique? Also discuss the TCP connection management. [10]

OR

9. Compare and contrast between integrated services and Differential Services. [10]

10. Explain name – address and address – name resolution process. [10]

OR

11. Describe the various parts of e-mail address and show the process of sending and receiving e-mails. [10]

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R16

Code No: 135AE

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, May/June - 2019
DATA COMMUNICATION AND COMPUTER NETWORKS
(Common to CSE, IT)

Time: 3 hours **Max. Marks: 75**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

(25 Marks)

1.a)	List out the topologies used in networks.	[2]
b)	Differentiate circuit switched networks and datagram networks.	[3]
c)	Explain flow control.	[2]
d)	Describe the differences between PPP and HDLC.	[3]
e)	Differentiate broadcasting and flooding.	[2]
f)	Define tunneling.	[3]
g)	Differentiate between TCP and UDP.	[2]
h)	Why three way handshake is used in TCP.	[3]
i)	What is the use of FTP?	[2]
j)	What is the header format of HTTP reply message?	[3]

PART - B

(50 Marks)

2.a) Explain the ATM reference model and describe the functions performed by each layer.
b) What are the advantages and disadvantages of ring topology? [5+5]

OR

3.a) Elicit types of transmission media with their merits and demerits.
b) Describe the characteristics of layered architecture. [5+5]

4.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.
b) Explain the CSMA schemes with diagrams. [5+5]

OR

5.a) Elucidate PCF and DCF in 802.11 format.
b) A very heavily loaded 1 km long, 10-Mbps token ring has propagation speed of 200m/μsec. Fifty stations are uniformly spaced around the ring. Data frames are 256-bits, including 32 bits of overload. Acknowledgements are piggybacked onto the data frames and are included as spare bits within the data frames and are effectively free. The token is 8 bits. Is the effective data rate of this higher or lower than the effective data rate of a 10-Mbps CSMA/CD NETWORK? [5+5]

6.a)	Differentiate DVR and OSPF.	
b)	How count to infinity problem is resolved in DVR.	[5+5]
	OR	
7.a)	Explain ARP an RARP with examples.	
b)	What is purpose of ICMP? Explain its messages in detail.	[5+5]
8.a)	Explain the features and applications of UDP.	
b)	Elucidate congestion control in datagram subnets.	[5+5]
	OR	
9.a)	Elucidate the congestion prevention policies.	
b)	Explain the TCP header fields in detail.	[5+5]
10.a)	What is an Electronic mail? Explain the two scenarios of architecture of E-Mail.	
b)	Explain the architecture of WWW. Discuss client and server side functionality of this architecture.	[5+5]
	OR	
11.a)	What is SNMP? Briefly discuss the SNMP model components.	
b)	What is the use of DNS? Explain how it works?	[5+5]

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R16

Code No: 135AE

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, December - 2019
DATA COMMUNICATION AND COMPUTER NETWORKS
(Common to CSE, IT)

Time: 3 Hours **Max. Marks: 75**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

1.a)	How are computer networks classified on the basis of physical size?	[2]
b)	List the difference between logical, physical and port addresses.	[3]
c)	How would you describe access point?	[2]
d)	Illustrate the function of hop by hop flow control.	[3]
e)	What is meant by Tunneling?	[2]
f)	Based on what you know, generalize the term Network Address Translation.	[3]
g)	Discover the processes involved in process-to-process delivery.	[2]
h)	Measure the performance of TCP State Transition Control.	[3]
i)	What is the need of FTP?	[2]
j)	What information would you use to examine the view of DNS?	[3]

PART – B

(50 Marks)

2.a) Examine OSI architecture with neat diagram.
b) Evaluate and explain about your understanding about network [5+5]

OR

3. Explain in detail about the different phases of Virtual –Circuit networks. [10]

4. How performance is improved in CSMA/CD protocol compared to CSMA protocol? Explain. [10]

OR

5. Use IEEE 802.3 and IEEE 802.11 to generalize the differences between wired and wireless LANS. [10]

6. Why subnetting is necessary? With suitable example, develop the concept of subnetting in class B network. [10]

OR

7.a) How would you summarize the services expected from the network layer?
b) Describe in detail the operation of OSPF protocol by considering a suitable network. [5+5]

8.a) Describe in detail about reliable flooding.
b) How would you summarize TCP congestion control like AIMD Slow start Fast transmit and fast recovery? [5+5]

OR

9. Describe with examples the three mechanisms by which congestion control is formulated in TCP. [10]

10.a) Describe the elements of network management in detail.
b) Explain the operation of SNMP protocol in detail. [5+5]

OR

11. Analyze the message format and the message transfer and the underlying protocol involved in the working of the electronic mail. [10]

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R18

Code No: 155AU

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, September - 2021
DATA COMMUNICATION AND COMPUTER NETWORKS
(Information Technology)

Time: 3 hours **Max. Marks: 75**

Answer any five questions
All questions carry equal marks

1.a) Describe in detail about the concept of data transmission and its terminology with necessary example.
b) Explain about ISO-OSI reference model with a neat sketch. [7+8]

2.a) Summarize circuit switching technology implementation in Telephone networks.
b) Write short note on Multiplexing. [8+7]

3.a) Explain why collision is an issue in a random-access protocol but not in controlled access or channelizing protocols?
b) Brief in detail about collision avoidance in Wi-Fi (802.11). [7+8]

4. With the neat sketches, formulate and explain the working principle of CRC with an example. [15]

5. Define and describe Classful Addressing and Classless Addressing. [15]

6.a) How would you demonstrate the challenges in inter-domain routing?
b) With a neat diagram explain distance vector routing protocol. [7+8]

7. How is congestion controlled? Explain in detail about congestion control mechanisms in transport layer. [15]

8.a) Explain Telnet in detail.
b) Illustrate the role of POP3 in electronic mail applications. Explain in detail. [7+8]

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R18

Code No: 155AU

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, February - 2022
DATA COMMUNICATION AND COMPUTER NETWORKS
(Information Technology)

Time: 3 hours **Max. Marks: 75**

Answer any five questions
All questions carry equal marks

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1.a)	What is Multiplexing? Write about FDMA, TDMA?	
b)	Define the network topology? List various types of Topologies.	[10+5]
2.	Describe the various Transmission modes with examples.	[15]
3.a)	What is the functionality of Data link layer in ISO- OSI model?	
b)	Write about the Error detection techniques Parity bit and LRC.	[7+8]
4.a)	What is Flow control? Write about Stop and wait Protocol.	
b)	Explain about PPP.	[8+7]
5.a)	What are the types of class full addressing?	
b)	Write about IPV4.	[8+7]
6.	Discuss with Uni-Cast Routing Protocols.	[15]
7.a)	Differences between TCP and UDP Protocols.	
b)	What is mean by congestion control? Compare Open loop congestion control and Closed loop congestion control?	[7+8]
8.a)	Discuss with simple mail transfer protocol.	
b)	Explain about WWW.	[8+7]

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R18

Code No: 155AU

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, August - 2022
DATA COMMUNICATION AND COMPUTER NETWORKS
(Information Technology)

Time: 3 Hours **Max. Marks: 75**

Answer any five questions
All questions carry equal marks

- - -

1.a)	What is connection? Explain different types of connections.	
b)	Discuss the features and principles of OSI reference model diagram.	[7+8]
2.	Explain in detail different types of transmission media with neat sketches.	[15]
3.	Explain the following terms. a) ALOHA. b) Architecture of IEEE 802.11	[7+8]
4.a)	Compare and contrast a random access protocol with a controlled access protocol.	
b)	What is hamming code? Explain its purpose.	[9+6]
5.a)	Differentiate between physical and logical addressing.	
b)	What is internetworking? Explain its types.	[7+8]
6.a)	Discuss the applications of tunneling.	
b)	Differentiate between unicast, broadcast and multicast streams.	[6+9]
7.a)	Briefly explain about process to process delivery.	
b)	What is congestion control? Explain.	[8+7]
8.a)	Differentiate between FTP and SMTP.	
b)	What is an Electronic Mail (E-Mail)? Discuss the advantages of it.	[7+8]

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R18

Code No: 155AU

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, January/February - 2023
DATA COMMUNICATION AND COMPUTER NETWORKS
(Common to IT, CSIT)

Time: 3 Hours **Max. Marks: 75**

Note: i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

1.a)	What are the important components of any data communications systems?	[2]
b)	What are the key elements of any network protocol?	[3]
c)	List all the framing techniques.	[2]
d)	What is TDMA?	[3]
e)	Write the network id, host id and class of the ip address 125.125.125.125.	[2]
f)	What is fragmentation? Write its significance.	[3]
g)	What is a socket in transport layer?	[2]
h)	List all QoS parameters of transport layer.	[3]
i)	What is a hierarchical namespace in DNS?	[2]
j)	Write a brief note on WWW.	[3]

PART – B

(50 Marks)

2.	What is the need of a network standard? Explain various functions of each layer in OSI reference model in detail.	[10]
	OR	
3.a)	Brief explain about frame relay networks.	
b)	Compare datagram networks and circuit switched networks.	[5+5]
4.a)	Calculate the Hamming code for the bits 10101010.	
b)	Explain simple stop and wait protocol.	[5+5]
	OR	
5.a)	Write about the control frames of HLDC protocol.	
b)	Explain the frame format of IEEE 802.3 standard.	[5+5]
6.a)	What do you understand about classfull IP addresses? Explain.	
b)	Explain the significance of options field of IP packet.	[5+5]
	OR	
7.a)	Explain unicast routing protocol in detail.	
b)	Consider a block of IP addresses with IP address 205.16.35.39/28 granted to a small organization and i) find the range of IP addresses ii) draw the LAN configuration.	[5+5]

8.a)	Write about the addressing mechanisms adopted by the transport layer.	
b)	Explain how a typical client and server communication takes place in a typical network.	[5+5]
	OR	
9.a)	Write a comparative notes on TCP and UDP protocols.	
b)	What is congestion? Explain any two methods of handling it.	[5+5]
10.a)	Explain the importance of a user agent.	
b)	Explain how a file transfer is done using FTP?	[5+5]
	OR	
11.	Explain DNS in internet in detail.	[10]

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