

SYNERGY INSTITUTE OF ENGINEERING AND TECHNOLOGY, DHENKANAL

Near NH-55, Banamali Prasad – 759001

**Assignment-I****Name-****Full Marks-40****Duration-Within 1 Week from Notification****Registration No-****Subject with Code: COMPUTER NETWORKS
(CSPC2007)****Course & Branch: B. Tech: CSE**

Course Outcome	Total Marks	Marks Secured	Signature of Evaluator
CO1	40		

Section- A Answer All Questions

1. Define network topology. How many types of network topologies are available? [2marks][CO1][L1]
2. Flow control is the responsibility of ----- and ----- layers of OSI Model? [2marks][CO1][L1]
3. How many types of modes are used in data transferring through networks? [2marks][CO1][L2]
4. What is the difference between logical address and physical address? [2marks][CO1][L2]

Section-B**Answer All Questions**

1. Discuss various types of topologies with advantages and disadvantages of each one. [6marks][CO1][L2]
2. Differentiate between Twisted pair, coaxial cable and optical fiber. [6marks][CO1][L1]

Section-C**Answer All Questions**

1. What do you mean by Transmission media? Describe different types of transmission media with advantages and disadvantages of each? [10 marks][CO1] [L2]
2. Discuss the layer functionalities of OSI reference model [10 marks][CO1][L3]

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Course Outcome	Total Marks	Marks Secured	Signature of Evaluator
CO2	40		

Section- A Answer All Questions

1. Explain bit stuffing. [2marks][CO2][L1]
2. Explain the mechanism of stop-and-wait ARQ. [2marks][CO2][L2]
3. What is piggybacking? [2marks][CO2][L1]
4. What is Hidden station Problem? [2marks][CO2][L1]

Section-B**Answer All Questions**

1. What do you mean by multiple accesses? Explain CSMA/CD. [6marks][CO2][L1]
2. Differentiate between circuit switching and packet switching [6marks][CO2][L2]

Section-C**Answer All Questions**

1. Explain the flow control mechanism. [10 marks][CO2][L2]
2. Explain FDMA, CDMA and TDMA. [10 marks][CO2][L3]

Additional Questions

1. The message 11001001 is to be transmitted using the CRC polynomial $x^3 + 1$ to protect it from errors. The message that should be transmitted is:_____
2. Suppose we are transmitting frames between two nodes using Stop-and-Wait protocol. The frame size is 3000 bits. The transmission rate of the channel is 2000 bps (bits/ second) and the propagation delay between the two nodes is 100 milliseconds. Assume that the processing times at the source and destination are negligible. Also, assume that the size of the acknowledgement packet is negligible. Which ONE of the following most accurately gives the channel utilization for the above scenario in percentage?

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**Assignment-III****Name-****Full Marks-40****Duration-Within 1 Week from Notification****Registration No-****Subject with Code: COMPUTER NETWORKS
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Course Outcome	Total Marks	Marks Secured	Signature of Evaluator
CO3	40		

Section- A Answer All Questions

1. What is piggybacking [2marks][CO3][L1]
2. List two main function of Transport layer [2marks][CO3][L1]
3. Why we migrate from IPv4 to IPv6? [2marks][CO3][L3]
4. How the routers get the information about neighbor? [2marks][CO3][L2]

Section-B Answer All Questions

1. Differentiate between IPv4 and IPv6. [6marks][CO3][L2]
2. In a block of addresses, we know the IP address of one host is 182.44.82.16/26. What are the first address (network address) and the last address in this block? [6marks][CO3][L3]

Section-C Answer All Questions

1. Explain the following networking devices in detail [10 marks][CO3] [L2]
 - a. Router
 - b. Bridge
 - c. Gateway
 - d. Repeater
 - e. Hub
 - f. Switch
2. What are the types of class full addressing? And Function of each class address range the following IPv4 addresses from binary notation to dotted-decimal notation.
 - a. 10000001 00001011 00001011 11101111
 - b. 11000001 10000011 00011011 11111111 [10 marks][CO3][L3]

Additional Questions

1. If a class B network on the Internet has a subnet mask of 255.255.248.0, what is the maximum number of hosts per subnet? [2marks][CO3][L2]

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**Assignment-IV****Name-****Full Marks-40****Duration-Within 1 Week from Notification****Registration No-****Subject with Code: COMPUTER NETWORKS
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Course Outcome	Total Marks	Marks Secured	Signature of Evaluator
CO4	40		

Section- A Answer All Questions

1. Mention any two functions of application layer. [2mark][CO4][L1]
2. What do you mean by Proxy server? [2mark][CO4][L1]
3. What is the significance of www in internet? [2mark][CO4][L1]
4. Differentiate between POP3 and SMTP. [2mark][CO4][L2]

Section-B**Answer All Questions**

1. What is congestion? Explain the problem and prevention principle. [6marks][CO3][L2]
2. Draw the schematic diagram of IPv4 header and explain. [6 marks][CO3][L3]

Section-C**Answer All Questions**

1. Explain DNS and SMTP. [10 marks][CO4] [L2]
2. Explain remote login and WWW. [10 marks][CO4][L3]

Additional Questions

1. What is HTTP? Describe different types of HTTP. [2marks][CO4][L2]