UNIT WISE QUESTION BANK

UNIT–I				
S.No		**Questions**	**BT**	**CO**
Part – A (Short Answer Questions)				
1		Define computer network and give its classification depending on the area they encompass	L4	CO1
2		Classify the computer networks based on their topologies.	L4	CO1
3		What is computer communication system?	L3	CO1
4		List the uses of computer in communication	L4	CO1
5		Define network addressing	L4	CO1
6		Define reliability	L4	CO1
7		Elaborate network security in brief	L4	CO1
8		Define point to point communication and give its types.	L5	CO1
9		List the types of Network standards.	L3	CO1
10		What is multidrop network and write its applications	L3	CO1
Part – B (Long Answer Questions)				
11	a)	Explicate the types of computer networks by their topology.	L2	CO1
	b)	Explain the telephone system and Data communications	L2	CO1
12	a)	Discuss in detail about Point to point communication	L2	CO1
	b)	Discuss in detail about broadcast Network of communication	L2	CO1
13	a)	Give a brief note on network standards	L2	CO1
	b)	Explain switched networks.	L2	CO1
14	a)	Compare open standards with closed standards	L2	CO1
	b)	Elucidate Network routing and interoperability	L2	CO1
15	a)	Explain Network media and Communication Protocols	L2	CO1
	b)	Elaborate Broadcast networks.	L2	CO1
16		Classify the computer networks by the area they encompass	L3	CO1

UNIT–II				
S.No		**Questions**	**BT**	**CO**
Part – A (Short Answer Questions)				
1		What are the advantages of multiplexing?	L4	CO2
2		Give a note on application layer protocol.	L3	CO2
3		Discuss about datagram approach of computer network switching.	L3	CO2
4		Discuss about virtual circuit approach of computer network switching	L4	CO2
5		Discuss in brief about Message switching	L3	CO2
6		Explain centralized systems in computer communication and Networking Models	L4	CO2
7		Explain Decentralized systems in computer communication and Networking Models	L4	CO2

8		Explain the Distributed Systems in computer communication and Networking Models	L4	CO2
9		Why Multiplexing is required? Enlist the types of multiplexing.	L4	CO2
10		Define Bandwidth and Data Rate	L5	CO2
Part – B (Long Answer Questions)				
11	a)	Write three different Transmission modes and Explain.	L2	CO2
	b)	Explain the communication service methods and data transmission modes.	L3	CO2
12	a)	Discuss Centralized and Decentralized System with examples.	L4	CO2
	b)	Describe OSI reference Model and Explain the Purpose of each layer.	L5	CO2
13	a)	Compare Circuit switched network with Packet switched network.	L4	CO2
	b)	Explicate Synchronous, and Asynchronous Communication.	L5	CO2
14	a)	Elucidate Client/Server Model.	L5	CO2
	b)	Elucidate Peer to Peer Model.	L3	CO2
15	a)	Differentiate Serial and Parallel Communication.	L5	CO2
	b)	Differentiate TDM and FDM.	L4	CO2
16	a)	Explain the Distributed Systems in computer communication and Networking Models	L4	CO2
UNIT–III				
S.No		**Questions**	**BT**	**CO**
Part – A (Short Answer Questions)				
1		What is amplitude shift keying (ASK) and how is it used in analog signal representation?	L1	CO3
2		How can digital data be represented using analog signals? Give an example.	L1	CO3
3		Differentiate between frequency shift keying (FSK) and phase shift keying (PSK).	L1	CO3
4		Mention any two line coding schemes used in digital data transmission.	L1	CO3
5		How is analog data converted into a digital signal?	L2	CO3
6		Define data rate and bandwidth. How are they related?	L1	CO3
7		What is a T1 carrier system? Mention its data rate and number of channels.	L1	CO3
8		Explain Time Division Multiplexing (TDM) with respect to digital carrier systems.	L1	CO3
9		Differentiate between T1 and E1 carrier systems.	L1	CO3
10		What is modulation, and why is it necessary in analog signal transmission?		
Part – B (Long Answer Questions)				
11	a)	Why are digital signals better than analog signals? Explain	L3	CO3
	b)	How do you convert analog signal to digital signal? Discuss.	L2	CO3

12	a)	List and explain the characteristics of analog signals	L2	CO3
	b)	Compare and contrast analog and digital signal transmission. Discuss their advantages, disadvantages, and areas of application.	L3	CO3
13	a)	Discuss the different modulation techniques used for transmitting digital data using analog signals. Explain ASK, FSK, and PSK with waveform illustrations.	L2	CO3
	b)	What is line coding? Explain the various line coding techniques such as NRZ, RZ, Manchester, and Differential Manchester coding. Discuss their pros and cons.	L3	CO3
14	a)	Define data rate and bandwidth. Derive the relationship between them using Nyquist and Shannon's theorems. Explain the importance of bandwidth efficiency.	L2	CO3
	b)	What are the major techniques used for bandwidth reduction? Explain how data compression and multiplexing help in reducing bandwidth.	L3	CO3
15	a)	Explain the concept of digital carrier systems. Compare T1 and E1 systems in terms of structure, data rate, and number of channels	L2	CO3
16	a)	With the help of suitable diagrams and examples, explain how data is transmitted from a source to a destination using different signal types and carrier systems. Include modulation, conversion, encoding, and multiplexing concepts in your answer.	L2	CO3

UNIT–IV

S.No		Questions	BT	CO
Part – A (Short Answer Questions)				
1		What is attenuation? How does it affect signal transmission?	L1	CO4
2		Differentiate between twisted pair and coaxial cable.	L1	CO4
3		List any two advantages of fiber optic cables over copper	L1	CO4
4		Mention two differences between single-mode and multi-mode fiber.	L1	CO4
5		List any three services provided by the data link layer.	L1	CO4
6		What is framing? Why is it important in data transmission?	L1	CO4
7		What is the role of the Logical Link Control (LLC) sublayer?	L1	CO4
8		Mention any two functions of the MAC sublayer.	L1	CO4
9		State one advantage and one disadvantage of MAC protocols.	L1	CO4
10		How does CSMA/CA differ from CSMA/CD?	L1	CO4
Part – B (Long Answer Questions)				
11	a)	Explain the physical and electrical characteristics of wire.	L2	CO4
	b)	Draw and explain the fiber optic media.	L3	CO4
12	a)	Explain the different types of transmission media – copper cables, fiber optics, and wireless media. Compare their structure, working principles, advantages, and limitations	L2	CO4
	b)	Compare and contrast twisted pair, coaxial cable, and fiber optic cable based on speed, cost, range, and noise resistance. Provide suitable examples for each.	L3	CO4

13	a)	Explain the functions of the Data Link Layer in the OSI model. How does it ensure reliable transmission between two nodes? Include the role of framing and error control.	L3	CO4
	b)	What is error detection in the data link layer? Describe any two methods of error detection with examples.	Ll3	CO4
14	a)	Write a detailed note on framing techniques used in the Data Link Layer. Explain any three methods with suitable diagrams.	L2	CO4
	b)	Describe the structure and function of the Logical Link Control (LLC) and Medium Access Control (MAC) sublayers. Explain how they interact to support data transmission.	L3	CO4
15	a)	Discuss the role of the MAC sublayer in managing access to the shared transmission medium. Explain protocols like CSMA/CD and CSMA/CA with examples.	L2	CO4
	b)	Explain how MAC addressing works. Why is it important in LAN communication? Compare MAC vs IP addressing.	L2	CO4
16	a)	Compare and contrast CSMA/CD and CSMA/CA. Where are they used, and how do they help in collision handling in network communications?	L2	CO4

UNIT–V

S.No		Questions	BT	CO
Part – A (Short Answer Questions)				
1		What is data link layer	L4	CO5
2		Draw the structure of IEEE 802.3 frame.	L3	CO5
3		What is flow control	L4	CO5
4		Define codeword	L5	CO5
5		Explain Token passing protocols	L4	CO5
6		Explain CSMA/CD	L5	CO5
7		Compare Bridges vs Repeaters.	L5	CO5
8		Compare statistical LANs and Deterministic LANs	L3	CO5
9		What do you understand by data prioritization	L5	CO5
10		Give the types of switches	L4	CO5
Part – B (Long Answer Questions)				
11	a)	Compare and contrast Switches Vs Routers	L4	CO5
	b)	Give a brief note on repeaters	L3	CO5
12	a)	List and explain the types of In-Device and Inter-Device Connectors.	L4	CO5
	b)	Write a note about Transceivers and media converters	L5	CO5
13	a)	Write a note on Repeaters	L4	CO5
	b)	Write a note on NIC cards and PC Cards.	L5	CO5
14	a)	Write a note on bridges.	L5	CO5
	b)	Write a note on switches.	L3	CO5
15	a)	Compare Bridges vs Repeaters.	L5	CO5

* **Blooms Taxonomy Level (BT)** (L1 – Remembering; L2 – Understanding; L3 – Applying;L4 – Analyzing; L5 – Evaluating; L6 – Creating)

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