

Enrollment No.....



Faculty of Engineering
End Sem (Even) Examination May-2022
CB3CO12 Computer Networks
Programme: B.Tech. Branch/Specialisation: CSBS

Duration: 3 Hrs.**Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

- Q.1 i. Which term refers to a network that provides secure access to the corporate offices by suppliers, customers, and collaborators? **1**
(a) Internet (b) Intranet (c) Extranet (d) Extendednet
- ii. Which physical topology is mostly used for setup of LAN? **1**
(a) Token Ring (b) Token Bus
(c) Star (d) Mesh
- iii. Hamming code is used for- **1**
(a) Error Detection
(b) Error-Correction
(c) Error-Correction and Detection
(d) Detection of bursty error
- iv. What is contained in the trailer of a data-link frame? **1**
(a) Logical address (b) Physical address
(c) Data (d) Error detection
- v. What is the prefix length notation for the subnet mask 255.255.255.224? **1**
(a) /25 (b) /26 (c) /27 (d) /28
- vi. Which address prefix range is reserved for IPv4 multicast? **1**
(a) 240.0.0.0 – 254.255.255.255
(b) 224.0.0.0 – 239.255.255.255
(c) 169.254.0.0 – 169.254.255.255
(d) 127.0.0.0 – 127.255.255.255
- vii. Which of the following are transport layer protocols used in networking? **1**
(a) TCP and FTP (b) UDP and HTTP
(c) TCP and UDP (d) HTTP and FTP

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viii.	Transmission control protocol _____.	1
	(a) Is a connection-oriented protocol	
	(b) Uses a three way handshake to establish a connection	
	(c) Receives data from application as a single stream	
	(d) All of these	
ix.	Which of the following is an application layer service?	1
	(a) Network virtual terminal	
	(b) File transfer, access, and management	
	(c) Mail service	
	(d) All of these	
x.	Which is a time-sensitive service?	1
	(a) File transfer	
	(b) File download	
	(c) E-mail	
	(d) Internet telephony	
Q.2	i. Why OSI model is known as layered architecture?	2
	ii. List three major transmission media usen in networking. Mention two advantages and disadvantages for all three.	3
	iii. What is the difference between Frequency Division Multiplexing and Wave Division Multiplexing? Why sync pulse is required in TDM?	5
OR	iv. What are the Functions of Transport, Network and Data Link Layer? Which Layer is responsible for Reliable connection? .	5
Q.3	i. What are the functions of LLC? Why is Ethernet said to be 1-persistent protocol?	4
	ii. How Selective repeat request is different from Go-back-N ARQ. Explain with a suitable diagram with 08 packets sent from sender to receiver.	6
OR	iii. In a CSMA / CD network running at 1 Gbps over 1 km cable with no repeaters, the signal speed in the cable is 200000 km/sec. What is minimum frame size for this network?	6
Q.4	i. Discuss all classes of class base IPv4 classification.	4
	ii. Why IP addressing is called logical addressing. How IP address gets changed when user moves from one network to another network. Which protocol helps in getting IP address.	6
OR	iii. Explain the header format of IPv6 addressing scheme.	6

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Q.5	i. TCP is called as a reliable communication while UDP is unreliable, why? If UDP is unreliable then why it is used in networking, justify your answer.	4
	ii. Which parameter can be smoothed with the help of leaky bucket algorithm? How token bucket algorithm is different from leaky bucket.	6
OR	iii. Transport layer is known as Process to Process communication support layer, justify your answer. Explain port numbering system used at transport layer.	6
Q.6	Attempt any two:	
	i. List the four protocols used in e-mail communication. Discuss functions of each protocols. (Two functions of each)	5
	ii. How DNS is different from DDNS. Explain in detail.	5
	iii. Write short notes on cryptography.	5

Marking Scheme CB3CO12 Computer Networks

Q.1	i.	Which term refers to a network that provides secure access to the corporate offices by suppliers, customers, and collaborators? (c) Extranet	1
	ii.	Which physical topology is mostly used for setup of LAN? (c) Star	1
	iii.	Hamming code is used for- (c) Error-Correction and Detection	1
	iv.	What is contained in the trailer of a data-link frame? (d) Error detection	1
	v.	What is the prefix length notation for the subnet mask 255.255.255.224? (c) /27	1
	vi.	Which address prefix range is reserved for IPv4 multicast? (b) 224.0.0.0 – 239.255.255.255	1
	vii.	Which of the following are transport layer protocols used in networking? (c) TCP and UDP	1
	viii.	Transmission control protocol _____. (d) All of these	1
	ix.	Which of the following is an application layer service? (d) All of these	1
	x.	Which is a time-sensitive service? (d) Internet telephony	1

Q.2	i.	OSI model is known as layered architecture	2 marks	2
	ii.	Any three major transmission media (0.5 mark * 3)	1.5 marks	3
		Two advantages for all three (0.25 mark * 3)	0.75 mark	
		Two disadvantages for all three (0.25 mark * 3)	0.75 mark	
	iii.	Any four differences (1 mark * 4)	4 marks	5
		Sync pulse	1 mark	
OR	iv.	Functions of Transport, Network and Data Link Layer (3 functions of each layer) (1.5 marks * 3)	4.5 marks	5
		Layer is responsible for Reliable connection	0.5 mark	

Q.3	i.	Functions of LLC	2 marks	4
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		Ethernet	2 marks	
	ii.	Selective repeat request	4 marks	6
		Suitable diagram	2 marks	
OR	iii.	As per calculation / explanation	6 marks	6
Q.4	i.	Five classes (0.8 mark * 5)	4 marks	4
	ii.	IP addressing is called logical addressing	2 marks	6
		IP address gets changed	3 marks	
		Protocol helps in getting IP address	1 mark	
OR	iii.	IPv6 addressing header format diagram	3 marks	6
		Explanation	3 marks	
Q.5	i.	Reliable communication	2 marks	4
		UDP is unreliable	2 marks	
	ii.	Parameter can be smoothed	1 mark	6
		Diagram with explanation	3 marks	
		Difference	2 marks	
OR	iii.	Transport layer is known as	3 marks	6
		Port numbering system	3 marks	
Q.6		Attempt any two:		
	i.	Any four protocols names	1 mark	5
		Functions of each protocols (1 mark * 4)	4 marks	
	ii.	DNS is different from DDNS		5
		As per explanation		
	iii.	Cryptography		5
		As per explanation		
