Total No. of Questions: 6 *Total No. of Printed Pages:2*

Enrollment No.....

Faculty of Engineering

End Sem (Odd) Examination Dec-2019

CA5CO12 Computer Networks

Programme: MCA Branch/Specialisation: Computer Application

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. _____ LAN topology describes the possible connections between pairs of networked end-points that can communicate. **1**

(a) Complex (b) Physical (c) Logical (d) Incremental

ii. Delimiting and synchronization of data exchange is provided by **1**

(a) Application layer (b) Session layer

(c) Transport layer (d) Link layer

iii. Header of a frame generally contains **1**

(a) Synchronization bytes (b) Addresses

(c) Frame identifier (d) All of these

iv. Which one of the following is a data link protocol? **1**

(a) Ethernet (b) Point to Point Protocol

(c) HDLC (d) All of these

v. The wireless LAN specification defined by IEEE called _____ which covers the data link and physical layer. **1**

(a) IEEE802.2 (b) IEEE 802.11

(c) IEEE 802.3 (d) IEEE 802.5

vi. The main important technical contribution of narrowband ISDN is _____ **1**

(a) SMDS (b) Frame relay

(c) X.25 (d) ATM

vii. Term is used to place packet in its route to its destination is called **1**

(a) Delayed (b) Urgent

(c) Forwarding (d) Delivering

viii. In the IPv6 header, the traffic class field is similar to which field in the IPv4 header? **1**

(a) Fragmentation field (b) Fast switching

(c) TOS field (d) Option field

P.T.O.

ix. Which is a time-sensitive service? **1**

(a) File transfer (b) File download

(c) E-mail (d) Internet telephony

x. Retransmission of packets must be done when **1**

(a) Packet is lost (b) Packet is corrupted

(c) Packet is needed (d) All of these

Q.2 i. What do you mean by communication? Differentiate between serial and parallel communication. **3**

ii. Draw the OSI reference model and explain the functions of each layer. **7**

OR iii. What is multiplexing technique? Compare FDM, TDM and WDM. **7**

Q.3 i. What is sliding window protocol? **3**

ii. What is CRC? What is the remainder obtained by dividing X^7+X^5+1 by the generator polynomial X^3+1? **7**

OR iii. What do you mean by CSMA? Differentiate between Non- persistent, 1-persistent and P-persistent CSMA with diagram. **7**

Q.4 i. What is the relationship between TPs, VPs, and VCs? **3**

ii. What is ATM? Describe the issues involved in using ATM technology in LANs. **7**

OR iii. Explain the frame format of 802.3 and 802.4. **7**

Q.5 i. What is subnet addressing? Illustrate your answer with the help of an example. **3**

ii. Explain OSPF (Open Shortest Path First) routing algorithm. **7**

OR iii. Explain different types of networking and internetworking devices. **7**

Q.6 i. What are the techniques used to improve Quality of Service (QoS)? **3**

ii. Write short notes on: **7**

(a) WWW (b) Email

OR iii. What is Congestion Control? Explain the Token Bucket algorithm. **7**

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Marking Scheme
CA5CO12 Computer Networks

Q.1	i.	_____ LAN topology describes the possible connections between pairs of networked end-points that can communicate. (c) Logical		**1**
	ii.	Delimiting and synchronization of data exchange is provided by (b) Session layer		**1**
	iii.	Header of a frame generally contains (d) All of these		**1**
	iv.	Which one of the following is a data link protocol? (d) All of these		**1**
	v.	The wireless LAN specification defined by IEEE called _____ which covers the data link and physical layer. (b) IEEE 802.11		**1**
	vi.	The main important technical contribution of narrowband ISDN is _____ (b) Frame relay		**1**
	vii.	Term is used to place packet in its route to its destination is called (c) Forwarding		**1**
	viii.	In the IPv6 header, the traffic class field is similar to which field in the IPv4 header? (c) TOS field		**1**
	ix.	Which is a time-sensitive service? (d) Internet telephony		**1**
	x.	Retransmission of packets must be done when (d) All of these		**1**
Q.2	i.	Communication	1 mark	**3**
		Difference b/w serial and parallel communication	2 marks	
	ii.	Explanation of OSI reference model with diagram	2 marks	**7**
		Functionalities of each layer	5 marks	
OR	iii.	Definition of multiplexing technique	1 mark	**7**
		Comparison FDM, TDM and WDM 2 marks for each (2 marks * 3)	6 marks	
Q.3	i.	Sliding window protocol		**3**
		Definition	1 mark	
		Explanation	2 marks	
	ii.	Definition of CRC	1 mark	**7**
		Remainder obtained by dividing X^7+X^5+1 by the generator polynomial X^3+1	6 marks	
OR	iii.	Definition of CSMA	1 mark	**7**
		Difference b/w Non- persistent, 1-persistent and P-persistent CSMA with diagram	6 marks	
Q.4	i.	Relationship between TPs, VPs, and VCs		**3**
		1 mark for each relationship	(1 mark *3)	
	ii.	Definition of ATM	1 mark	**7**
		Explanation of three issues 2 marks for each issue (2 marks * 3)	6 marks	
OR	iii.	Frame format of 802.3	3.5 marks	**7**
		Frame format of 802.4	3.5 marks	
Q.5	i.	Definition of subnet addressing	1 mark	**3**
		Example	2 marks	
	ii.	OSPF (Open Shortest Path First) routing algorithm.		**7**
		Explanation	5 marks	
		Diagram	2 marks	
OR	iii.	Types of networking and internetworking devices.		**7**
		Definition	2 marks	
		Explanation with diagram	5 marks	
Q.6	i.	List of techniques		**3**
	ii.	Write short notes on:		**7**
		(a) WWW	3.5 marks	
		(b) Email	3.5 marks	
OR	iii.	Definition of Congestion Control	2 marks	**7**
		Token Bucket algorithm explanation with diagram	5 marks	

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