PECS12 - Data Communication and Networking

P. Pages : 1

Time : Three Hours

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GUG/W/23/10979

Max. Marks : 70

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Notes : 1. All questions carry equal marks.
2. Answer **any five** questions.
3. Assume suitable data wherever necessary.
4. Illustrate your answers wherever necessary with the help of neat sketches.

1.	a)	Explain the protocol architecture and PDU in detail.	**7**
	b)	Draw and explain communication model in detail.	**7**
2.	a)	Draw and explain TCP/IP architecture.	**7**
	b)	Differentiate between OSI and TCP/IP model in detail.	**7**
3.	a)	Explain IPv4 header format in detail.	**7**
	b)	Explain three different ways in which the CRC algorithm can be described.	**7**
4.	a)	Differentiate between FDM and TDM.	**7**
	b)	Explain the advantage of sliding window protocol compared to stop and wait flow control protocol.	**7**
5.	a)	Twenty - four voice signals are to be multiplexed and transmitted over twisted pair. What is bandwidth required for FDM? Assuming bandwidth efficiency of 1 bps/Hz. What is the bandwidth required for TDM using PCM?	**7**
	b)	Explain time division switching.	**7**
6.	a)	For N = 4, h = 3200, B = 9600, P = 1024, H = 16, S = 0.2, D = 0.001, compute the end to end delay for circuit switching, virtual switching and datagram packet switching. Assume that there is no acknowledgements.	**7**
	b)	What is topology. Explain the choice of Topology in detail?	**7**
7.	a)	Explain the difference between flow control and congestion control.	**7**
	b)	Explain the various layers of Fiber Distributed Data Interface (FDDI).	**7**
8.	a)	Write short note on digital signature with public key cryptography.	**7**
	b)	Differentiate between IPv4 and IPv6 in detail.	**7**

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