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Total number of printed pages – 2

B. Tech
PCCS 4302

Fifth Semester Regular Examination – 2014
DATA COMMUNICATION AND COMPUTER NETWORK

BRANCH(S) : CSE, IT

QUESTION CODE : H 145

Full Marks – 70

Time : 3 Hours

*Answer Question No. 1 which is compulsory and any **five** from the rest.
The figures in the right-hand margin indicate marks.*



1. Answer the following questions :

2 × 10

- What is meant by topology?
- What is the relationship between period and frequency?
- What is MAC address?
- What is IP address?
- What is bandwidth?
- What is Line Coding?
- Define block coding.
- What is Amplitude modulation?
- What is Serial Transmission?
- Define spread spectrum.

2. (a) What are communication channels? Discuss various communication channels available for networks. 5

(b) Discuss the factors that govern the selection of topology for a network. 5

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3. (a) Distinguish between baseband transmission and broadband transmission. 5
- (b) What are the propagation time and transmission time for a 2.5-kbyte message, if the bandwidth of the network is 1Gbps ? Assume that the distance between the sender and the receiver is 12,000 km and the light travels at 2.4×10^8 m/s. 5
4. (a) Differentiate OSI reference model and TCP/IP. 5
- (b) Compare Circuit switching and Packet switching. 5
5. (a) Distinguish between multilevel TDM, multiple slot TDM and pulse-stuffed TDM. 5
- (b) What is Cyclic Redundancy Check (CRC)? Explain CRC encoder and decoder with an example. 5
6. (a) Compare and contrast byte-stuffing and bit-stuffing. 5
- (b) Explain the reason for Stop-and-Wait ARQ Protocol to the Go-Back-N ARQ Protocol. 5
7. (a) Explain why collision is an issue in a random access protocol. 5
- (b) Compare between IPV4 and IPV6. 5
8. Write short notes (any two) : 5 × 2
- (a) Quadrature Amplitude Modulation (QAM)
- (b) UDP service for transport layer
- (c) Leaky bucket
- (d) Electronic Mail

