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Total number of printed pages – 2

B. Tech
PEEC 4304 (New)

Sixth Semester (Back) Examination – 2013
COMPUTER NETWORK AND DATA COMMUNICATION

BRANCH : EEE, ELECTRICAL, IEE

QUESTION CODE : B240

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 the difference between internet and Intranet ?
 - How do the layers of the Internet model correlate to the layers of OSI model ?
 - A line has a signal-to-noise ratio of 2000 and a bandwidth of 5000 KHz. What is the maximum data rate supported by this line ?
 - Define hamming distance and minimum hamming distance. Find the hamming distance, 'd' between pairs of words (10101, 11110).
 - What is piggybacking ? What is its usefulness ?
 - Explain why collision is an issue in random access protocol but not in controlled access or channelizing protocols ?
 - What are the network architectures available in Bluetooth ?
 - How tunneling helps in transition from IPv4 to IPv6 in network layer ?
 - What is the difference between connection less and connection oriented service in transport layer ?
 - What are the services provided by a user agent in an electronic mail system ?
2. (a) How are OSI and ISO related to each other ? 2
- (b) Describe the various functions performed by each layer in OSI model. 8

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3. (a) What is scrambling ? What is the result of scrambling the sequence 1110000000000 using B8ZS and HDB3 scrambling technique ? Assume that the last non-zero signal level has been positive. 5
- (b) Draw the graph of the NRZ-L, Manchester, Differential Manchester, 2B1Q and AMI scheme using the following data streams assuming the last signal level to be positive : 5
- (i) 0011001100110011
- (ii) 1010111110101011
4. What do you mean by process-to-process delivery ? Explain the client-server paradigm to compute process to process communication. 10
5. (a) What are the different transfer modes used in the various configurations of HDLC ? 5
- (b) Describe briefly the flow mechanism of Go Back N ARQ between sender and receiver with appropriate algorithm. 5
6. (a) Describe briefly the method of multiple access scheme assigned to wireless networks. 5
- (b) Differentiate between FDMA, TDMA and CDMA. 5
7. (a) What do you mean by hidden terminal and exposed terminal problem associated with wireless nodes ? 5
- (b) Briefly describe the four versions of ATM adaptation layer. 5
8. Write short notes on any **two** of the following : 5×2
- (a) Transmission Impairment
- (b) Frame Relay
- (c) Congestion control in transport layer
- (d) Domain Name System.

