Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

CS-5001 (CBGS)

B.E. V Semester

Examination, December 2017

Choice Based Grading System (CBGS)

Data Communication

Time : Three Hours

Maximum Marks : 70

Note: i) Total number of questions are eight.
ii) Attempt any five questions.
iii) All questions carry equal marks.
iv) Missing data if any assume suitably.

1. a) A binary data 11010101 10 is transmitted over a baseband channel. Draw the wave for transmitted data using the following formats:
NRZ-L NRZ-I RZ Manchester, Differential Manchester.
b) Describe briefly compression system? Why we need the compression system?

2. a) Explain the Architecture and Interface of ISDN. Differentiate between N-ISDN and B-ISDN.
b) Which switching method allows real-time data transfer? Mention the advantages of packet switching?

3. a) Explain why gateway is called protocol converter and also explain its working in detail.
b) What is difference between a central and secondary hub? What is the difference between a passive hub and a active hub? How do these categories interrelate?

4. a) What is the form of the signal in twisted pair cable and coaxial cable? How does this differ from the signal in fiber optics cable?
b) Why is ADSL unsuitable for business? Which DSL technology is best suited for business?

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5. a) A bit stream 10011101 is transmitted using the standard CRC method described in the text. The generator polynomial is x^3+1. Show the actual bit string transmitted. Suppose the third bit from the left is inverted during transmission. Show that this error is detected at the receiver's end.
b) If the 7bit Hamming code word received by receiver is 1011011. Assuming the even parity, state whether the received code word is correct or wrong. If wrong locate the bit in error.

6. a) Four 1 Kbps connection are multiplexed together. A unit is 1 bit. Find
i) The duration of 1 bit before multiplexing
ii) The transmission rate of link
iii) The duration of time slot and
iv) The duration of a frame
b) Write about Block Coding and explain how the errors are detected and corrected using Block coding?

7. a) Two communicating devices are using a single-bit even parity check for error detection. The transmitter sends the byte 10101010 and, because of channel noise, the receiver gets the byte 10011010. Will the receiver detect the error? Why or why not?
b) Compare and contrast the delays in connectionless and connection-oriented services. Which service creates less delay if the message is large? Which service creates less delay if the message is small?

8. Write short note on any four of the following:
a) HDSL
b) RJ-45
c) Frequency hopping
d) X.25
e) Electromagnetic spectrum

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