MCA (Revised)

Term-End Examination

December, 2013

MCS-042 : DATA COMMUNICATION AND COMPUTER NETWORKS

Time : 3 hours   *Maximum Marks : 100*

Note :   *Question number **one** is **compulsory**. Attempt **any three** questions from the rest.*

1. (a) Illustrate CSMA/CD Protocol. Also explain Backoff algorithm.   .10

     (b) Explain the concept of bit stuffing through an appropriate example.   5

     (c) If a binary signal is sent over 30 MHz and whose signal to noise ratio is 30dB, what is the maximum achievable channel capacity.   5

     (d) Explain encryption and decryption process in Triple DES.   5

     (e) Define Multiplexing. Explain TDM (synchronous and statistical both) in detail with the help of suitable diagram.   5

     (f) Illustrate constellation diagram of 8 - PSK and 8 QAM.   5

     (g) Draw polar NRZ - L and NRZ - I encoding for the following bit stream. 01001110   5

2. (a) Explain various steps in process of Analog to Digital Modulation.   7

     (b) Define CRC. Explain its purpose with suitable example.   7

     (c) Differentiate between Adaptive and Non Adaptive Routing.   6

3. (a) Describe Interior Gateway Routing Protocol. 7
   (b) Explain structure of Optical Fiber and also 7
       write its advantages and disadvantages.
   (c) Discuss the process of Local Procedure Call 6
       and Remote Procedure Call.

4. (a) Explain operation of Bridges in different 7
       LAN environment ?
   (b) Define broadcasting. Explain various 7
       methods for broadcasting.
   (c) Differentiate between Radio 6
       Communication and Satellite
       Communication.

5. (a) Explain RSA algorithm with the help of an 7
       example.
   (b) Describe Framing. Explain different 7
       methods of framing.
   (c) Describe Isochronous Communication and 6
       Write its advantages and disadvantages.

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