Third Semester MCA Degree Examination, Aug./Sept.2020
Computer Networks

Time: 3 hrs.   Max. Marks:100

Note: *Answer any FIVE full questions.*

1 a. Explain the functionality of OSI model with a net diagram.   (10 Marks)
   b. List and explain the types of networks based on scale.   (10 Marks)

2 a. Explain different types of transmission impairments.   (10 Marks)
   b. Apply NRZ, NRZ-I and Manchester encoding for the bit pattern 10000101111.   (06 Marks)
   c. Illustrate Shannon's capacity formula.   (04 Marks)

3 a. With a suitable diagram, explain the coaxial cable and optical fiber.   (10 Marks)
   b. What is digital modulation? Explain FDMA, TDMA and CDMA technique, in detail.
                                                                                       (10 Marks)

4 a. With a suitable scenarios explain stop and wait ARQ protocol.   (10 Marks)
   b. With a suitable example explain parity bit check and checksum error-detection techniques.
                                                                                       (10 Marks)

5 a. With a neat frame format explain the functionality of Ethernet [802.3].   (10 Marks)
   b. Explain distance vector routing algorithm with a suitable example.   (10 Marks)

6 a. With a neat diagram explain IPV_4 header.   (10 Marks)
   b. Explain the token-bucket algorithm in detail and compare with leaky-bucket algorithm.
                                                                                       (10 Marks)

7 a. Explain TCP header frame format.   (10 Marks)
   b. Explain the connection establishment and connection release using 3-way handshake
      protocol.   (10 Marks)

8 a. Explain E-mail system in detail.   (10 Marks)
   b. Write a note on :
      (i) DNS
      (ii) WWW   (10 Marks)

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