(Please write your Exam Roll No.) Exam Roll No. 015

END TERM EXAMINATION

THIRD SEMESTER [MCA] DECEMBER 2015

Paper Code: MCA 207 **Subject: Data Communication & Networking**

Time : 3 Hours **Maximum Marks :60**

Note: Attempt any five questions including Q.No. 1 which is compulsory. Select one question from each unit.

Q1. Answer the following briefly: **(2x10=20)**

a) Differentiate between a low pass filter and a band pass filter.
b) Explain different modes of transmission in an optical fiber.
c) Define QAM and draw the constellation diagram for 32QAM.
d) Why do we need flow control?
e) Differentiate between ALOHA and Slotted ALOHA.
f) What is the channel allocation problem?
g) What is classful addressing?
h) What is the utility of NAT?
i) Describe a 3- way handshake.
j) What is public key encryption?

Unit-I

Q2. a) Explain multiplexing and its types with focus on its application in the Mobile telephone system. **(7)**

b) Differentiate between OSI and TCP/IP reference models in terms of architecture. **(3)**

Q3. a) Describe different types of communication satellites. **(6)**

b) Encode the following bits into a digital signal using bipolar AMI and HDB3 encoding schemes: 1100100001101. **(4)**

PDTSPA

Unit-II

Q4. a) What is a two dimensional parity check? Calculate the redundancy bits for the following data using the Hamming code: 1100101011. **(7)**

b) Differentiate between Selective repeat and Go back N sliding window protocol. **(3)**

Q5. a) How are collisions avoided in a wireless network? **(6)**

b) Describe a collision free protocol. **(2)**

c) Draw the structure of an Ethernet frame. **(2)**

8-31

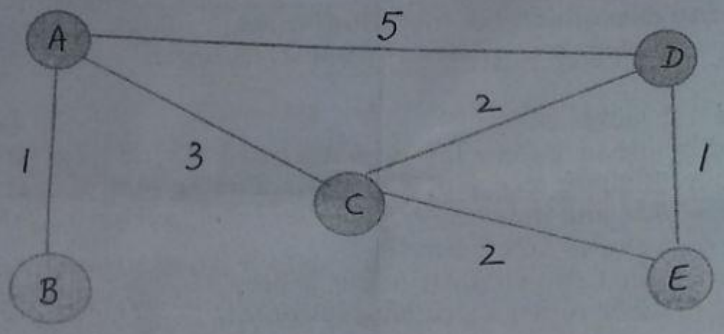
Unit-III

Q6. a) Explain the IPv4 with the help of a datagram format. **(4)**

b) Explain different types of ICMP messages. **(6)**

P.T.O.

Q7. a) Find the appropriate route from A to E in the following network through distance vector routing. **(6)**



b) Describe congestion control and methods to handle congestion on a network. **(4)**

Unit-IV

Q8. a) Explain the characteristics and applications of UDP. Compare it to TCP. **(6)**

b) Explain the process of connection establishment and termination in TCP. **(4)**

Q9. a) Describe the process of sending a message using the Digital Signature. **(6)**

b) Write short notes on the following: **(4)**
i) DNS
ii) WWW

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