(Please write your Exam Roll no:) **Exam roll no……..**

END TERM EXAMINATION

Third SEMESTER[MCA] DECEMBER 2012

Paper code:MCA 207 **Subject: Data Communication and Networking**

TIME :3 Hours **Maximum Marks:60**

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

Q1 (a)what are two reasons for using layered protocols?

(b)What is the principal difference between connectionless and connection-oriented communication?

(c)What is the main difference between TCP and UDP?

(d)List two advantages and two disadvantages of having international standards for network protocols?

(e)Differenciate between static and dynamic channel allocation?

(f)When web pages are sent out,they are prefixed by MIME headers.Why?

(g)The maximum payload of a TCP segment is 65,495.Why was such a storage number chosen?

(h)If a binary signal is send over a 3-KHz channel whose signal-to-noise ratio is 20dB.What is the maximum available data rate?

(i)What is the key difference between 2G and 3G mobile networks?

(j)Describe the characteristics of 10 Base and 10 Base 2 ethernet cables?

UNIT-1

Q2 (a) Explain the OSI reference model of computer networks with focus on the main protocols at each layer.

(b)What is the essential difference between message switching and packet switching?

Q3 (a)Encode the following data into digital signals:-

11001010.Use NRZ-L,NRZ-I,bipolar-AMI,Manchester and Difference Manchester formats.

(b)Describe AM,FM and PM.

UNIT-2

Q4 (a) A bit stream 10011101 is transmitted using the standard CRC method. The generator polynomial x^3+1 is used. Show the actual bits transmitted. Suppose the third bit from the left is inverted during transmission. Show that this error is detected at the receiver's end.

(b)Data link protocols almost always put the CRC in a trailor rather than in a header.Why?

Q5 Explain the following data link protocols:-

(a)HDLC

(b)PPP

UNIT-3

Q6 (a) Why does congestion take place in computer networks? How is congestion control done in Datagram Subnets?

(b)Describe the count-to-infinity problem.

Q7 (a) Differenciate between adaptive and non adaptive routing algorithm with examples?

(b)Differenciate between classful addressing and classless addressing.Give examples?

UNIT-4

Q8(a)What are the characteristics of TCP? What services does TCP provide for data communication?

(b)Why does TCP use the three way handshake and four way handshake?

Q9(a)Differnciate between public key encryption and private key encryption.

(b)What are the Digital Signature? How are they used for data security?

(c) Discuss the types of DNS message.