Roll No. ☐☐☐☐☐☐☐☐☐☐☐   Total No. of Pages : 02

Total No. of Questions : 08

M.Tech.(ECE) (2016 Batch)   (Sem.–1)
DATA COMMUNICATION NETWORK
Subject Code : MTEC-102
M.Code : 74147

Time : 3 Hrs.   Max. Marks : 100

INSTRUCTION TO CANDIDATES :
1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWENTY marks.

Ql. (a) With a suitable diagram, explain OSI network architecture. Compare it with TCP/IP.
(10)

(b) What is data communication? What are the possible ways of data transmission? Explain with examples. (10)

Q2. (a) Describe the limitations of IpV4 protocol. Explain how the limitations are overcome in IpV6. (10)

(b) What is network security? Why it is required? Describe the terms 'confidentiality', 'authentication','non-repudiation', and 'integrity'. (10)

Q3. (a) What is Multiplexing? Explain the working of STDM and FDM with their limitations.
(10)

(b) What is a Protocol? Differentiate between character-oriented and bit-oriented protocols.
(10)

Q4. (a) What type of errors can be detected by Parity Check Code? How is it implemented? Explain with a suitable example. (10)

(b) What is ATM Technology? Explain reference model of ATM along with the various services provided by it. (10)

Q5. (a) How Connection is established and Terminated in TCP using three-way handshaking mechanism? Describe in detail. (10)

(b) How does LAN differs from MAN? Explain briefly about different physical topologies used in LAN. (10)

Q6. (a) Explain leaky bucket and token bucket algorithm.   (10)

     (b) Differentiate between datagram and virtual circuit approaches for packet switching. (10)

Q7. (a) Discuss briefly the following polar encoding schemes: (10)

          a.   NRZ

          b.   RZ

          c.   Manchester

          d.   Differential Manchester

     (b) What is the significance of the twisting in twisted pair cable? What are the different categories of a twisted pair cables and their features?   (10)

Q8. (a) Find the class of each IP address with suitable explanation.   (10)

          a.   227.12.14.87

          b.   193.14.56.22

          c.   14.23.120.8

          d.   252.5.15.111

          e.   134.11.78.56

     (b) Write short notes on the following :

          a.   DQDB   (5)

          b.   Mobile IP33N operating system   (5)

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.