Roll No. ..... Total No. of Pages : 2

MCA/MX 5252

Computer Networks & Data Communication

Paper : MCA-202

Time : Three Hours] [Maximum Marks : 80

Note :– Question No. **1** is compulsory. In addition to this attempt **FOUR** questions by selecting **ONE** question from each Unit.

1. (a) Differentiate between connection- oriented and connection-less protocols.
   (b) What is Nyquist theorem ? State its significance.
   (c) What is Differential Manchester encoding ? Discuss its relevance.
   (d) What is FDDI ? What is its role ?
   (e) Differentiate between ADSL and Cable.
   (f) What is multi cast routing ? Discuss its significance.
   (g) What is virtual circuit ? Discuss its relevance.
   (h) What do you understand by limited Contention Protocols ? Discuss their role. 8×3=24

UNIT–I

2. (a) What is 'Network Topology' ? What are various types of network topologies ? Discuss benefits and limitations of these topologies over one another. 7
   (b) What is OSI reference model ? Explain the model by detailing out all important features. 7

3. Explain the following :
   (a) X. 25 7
   (b) ATM. 7

UNIT–II

4. (a) Differentiate between circuit switching and packet switching. 5
   (b) What is multiplexing ? What are various types of multiplexing techniques ? Illustrate. 9
5. Explain the following :
   (a) Satellite communication 7
   (b) Transmission impairments. 7

UNIT–III

6. (a) Data link protocols almost always put the CRC in a trailer rather than in a header. Why ? 7
   (b) What are sliding window protocols ? Illustrate their working along with significance. 7
7. Explain the following :
   (a) IEEE 802.3 7
   (b) Collision free protocols. 7

UNIT–IV

8. What is routing ? What are routing algorithms ? Which routing algorithm is the most popular ? Illustrate its working and justify its acceptability. 14
9. Explain the following :
   (a) Load shedding 7
   (b) Routing in Adhoc Networks. 7