53 (IT 302) DTCM

2018

DATA COMMUNICATION

Paper : IT 302

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

*Answer **any five** questions.*

1. Differentiate between TCP/IP and OSI protocol stack. Explain the functions of different layers in OSI protocol stack. 10+10=20

2. *(a)* What is flow control? Explain Go Back-N protocol with a diagram. 10

   (b) Explain the structure of an Ethernet frame. How Ethernet handles error? 5+5=10

3. Explain in details various guided mediums used for communication. 20

4. *(a)* What is Nyquist Theorem for capacity of a channel? What is the limitation of this theorem? How does Shannon's theorem overcome the limitation?
3+3+4=10

(b) How can analog data be encoded as a digital signal? Explain *any one* technique. 10

5. *(a)* What is spread spectrum? Why is it used? Explain FHSS with a diagram.
3+2+5=10

(b) Differentiate between switch, hub and bridge. 10

6. What is network topology? Explain different network topologies with diagram. Specify advantages and disadvantages of each.
20

7. Write short notes on: 2×10=20

(a) Manchester Encoding

(b) Transmission Impairments.
