Code: IT5T3

III B.Tech - I Semester – Regular/Supplementary Examinations October 2019

DATA COMMUNICATIONS AND COMPUTER NETWORKS
(INFORMATION TECHNOLOGY)

Duration: 3 hours   Max. Marks: 70

PART – A

Answer *all* the questions.   All questions carry equal marks

11x 2 = 22 M

1.

a) What are the components of a Data Communication System?

b) Explain Encapsulation.

c) Write about Parity Check with example.

d) What are the advantages of CRC Codes?

e) Discuss Piggybacking with example.

f) Describe about the notations to show IPv4 addresses.

g) What is an Autonomous System?

h) Give some of the applications of Multicasting.

i) Distinguish Reliable and Un Reliable Transport Layer Services.

j) Write about flow control in TCP.

k) Explain Bit Stuffing.

PART – B

Answer any ***THREE*** questions.   All questions carry equal marks.

$$3 \times 16 = 48 \text{ M}$$

2. a) Discuss various layers of TCP/IP Protocol Suite.   8 M

   b) What are various transport layer models proposed in OSI.
      Compare them.   8 M

3. a) Differentiate Forward Error Correction and Retransmission
                                                                8 M

   b) With a suitable example explain Stop-and –Wait protocol
      in Noiseless channel.   8 M

4. a) A System uses Go-Back-N ARQ with a window size of 7.
      If each packet carries 1000 bits of data, how long does it
      take to send 1 million bits of data if the distance between
      the sender and the receiver is 5000km and the propagation
      speed is 2×10^8 m/s. Ignore Transmission, waiting and
      processing delays. Assume no data or control frame is lost
      or damaged. Ignore the overhead due   to   header   and
      trailer.   8 M

   b) With neat diagram explain IPv6 Header format.   8 M

5. a) With a suitable network diagram explain Distance Vector
   Routing approach.   8 M

   b) Discuss the frame forwarding process with example.   8 M

6. a) With a neat diagram explain in detail every field of   UDP
   packet header format.   8 M

   b) Illustrate the operation of TCP.   8 M