

Code: IT5T3

**III B.Tech - I Semester – Regular/Supplementary Examinations
October 2017**

**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) Routing strategies are implemented in which layer?
- b) List the layers in OSI reference model.
- c) A channel is extremely noisy for which the value of signal-to-noise ratio is almost zero; what is the channel capacity?
- d) How can the checksum detect damage in data unit?
- e) Write down the range of class B private IPV4 address.
- f) What is the size of IPV4 and IPV6 address in bits?
- g) A subset of a network that includes all the routers but contains no loops is called?
- h) Can I configure two interfaces in the same subnet (t0 = 142.10.46.250/24 and t1 = 142.10.46.251/24)?
- i) If your routing table has a static, a RIP, and an IGRP route to the same network, which route will be used to route packets by default?
- j) What is Socket?

k) On which port UDP and TCP services run?

PART – B

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

3 x 16 = 48 M

2.a) Explain the layers of TCP/IP model with labeled diagram.

7 M

b) What are the types of addresses in networks?

4 M

c) Explain different Data flow directions.

5 M

3.a) If the transmitted code word is 10011000 and the received code word is 11001001. How can we detect using CRC with generator polynomial x^4+x^3+1 .

8 M

b) What are types of Elementary Datalink protocols used in data communication.

8 M

4.a) Give the advantages of IPv6 over IPv4.

4 M

b) What is Fragmentation and DF bit?

4 M

c) Draw the labeled structure of IPV4 packet. Briefly explain about Extension Headers.

8 M

- 5.a) Explain in detail about (Unicast, Broadcast Multicast) Multicast Routing Algorithm. 12 M
- b) Explain briefly distance vector routing algorithm. 4 M
- 6.a) What are the major differences between TCP and UDP? 8 M
- b) Discuss in detail about methods to control congestion in TCP. 8 M