

College of Engineering, Pune

END SEMESTER EXAM

(T.Y B.Tech)

(ET 316-DATA COMMUNICATIONS)

ESTC

Day & Date-wed. 24th April 2013

Timing- 2 to 5 pm

Max. Marks-50

Duration -3 hrs

Instructions:

1. All Questions are Compulsary.
2. Draw neat Diagram wherever necessary.
3. Figure to the right indicate full marks.
4. Assume suitable data wherever necessary.

Q. 1 Explain the following (Any Five) (10)

- a) Atmospheric absorption b) Concentrators c) Pulse stuffing
d) Interlacing e) Go-back-n f) Features of IPv6

Q.2 A. Calculate the thermal noise level in dBW at the receiver's output when (1)
receiver has an effective noise temperature of 285 K and 12 MHz
bandwidth.

B. Determine using Nyquist criterion, the signal levels required for a (1)
bandwidth of 2 MHz while channel capacity is 15 Mbps.

C. Describe the different modes of wireless propagation between two (3)
antennas.

D. What is a Geosynchronous satellite? Explain the applications of satellite (5)
communication.

Q.3 A. Why there is a need for Low Baud Modems? (2)

OR

A. Explain the scheme of Cable Modem. (2)

B. What is crossbar switch? What are its limitations? How will you (4)
overcome those limitations?

C. Explain the system of Frequency division multiplexing. State and explain (4)
the various groups in the hierarchy developed by AT&T ?

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- Q.4 A. How the data is transmitted from one computer to the another in the Computer networks using the Ethernet standard of LAN? (5)
- B. Explain the functions of various layers of Open System Interconnection (OSI) model. (5)
- Q.5 A. Given message, D=1001101001 (10bits) ,Pattern P = 101011 (6 bits) , Frame check sequence= to be calculated (5 bits) . Determine using Cyclic Redundancy check (CRC) whether there is error on the received frame. (3)
- B. Differentiate between Static and Dynamic allocation of channels. (3)
- C. Describe the frame structure of High-Level Data Link control (HDLC) protocol. (4)

-X-X-X-X-X-X-X-X-X-X-