**D 51550** (Pages : 2) Name.....

Reg. No.....

# FIFTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION DECEMBER 2008

## CS/IT/PTCS 2K 504—DIGITAL DATA COMMUNICATION

Time : Three Hours Maximum : 100 Marks

*Answer* **all** *questions.*

I. (a) Explain the need for multiplexing. Write the types of multiplexing.

(b) Explain the standards of data communication networks.

(c) Describe briefly the advantages of ATM.

(d) What are communication control devices ? Explain. Give examples.

(e) What are simplex and duplex protocols ? Explain.

(f) What are even and add parity ? Explain their significances.

(g) Explain the basic operation of a protocol.

(h) Consider the use of 500 bit frames on a 1 kbps satellite channel with a 300 ms delay. What is the maximum link utilization for stop and wait flow control ?

(8 × 5 = 40 marks)

II. (a) (i) Describe in detail the ISO reference model of data communication networks. (8 marks)

(ii) Explain the significance of propagation delay. (7 marks)

*Or*

(b) (i) Give an account on 'public carrier circuits'. (8 marks)

(ii) Write a note on 'Physical layer interfacing standards'. (7 marks)

III. (a) (i) Differentiate synchronous from asynchronous transmission modes. (8 marks)

(ii) Explain in brief about character and frame synchronization. (7 marks)

*Or*

(b) (i) Derive the algorithm for dynamic Huffman coding. (8 marks)

(ii) Explain the concept of pulse compression with neat sketches. (7 marks)

IV. (a) Describe in detail about stop and wait and sliding window protocol.

*Or*

(b) Discuss in detail about :

1 pigay backing. (8 marks)

2 Asynchronous data link protocol. (7 marks)

**Turn over**

V. (a) (i) Compare vertical redundancy check (VRC) with longitudinal redundancy check (LRC) methods of error detection. (8 marks)

(ii) Explain in detail about 'HDLC'. (7 marks)

*Or*

(b) Write short notes on :

1 Character-oriented protocol. (8 marks)

2 LAPB. (7 marks)

[4 × 15 = 60 marks]