Total No. of Questions : 5] *[Total No. of Printed Pages : 2*

Roll No .....

IT-501

B.E. V Semester

Examination, December 2016

Data Communication

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

ii) All parts of each question are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max.100 words) carry 3 marks, part D (Max.400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

Unit - I

1. a) Define Analog and Digital signals.
   b) What do you understand by attenuation and distortion?
   c) What are composite signals?
   d) Derive the expression for Shannon capacity.

OR

Describe briefly through put, jitter, delay and bandwidth product.

Unit - II

2. a) Compare serial and parallel transmission.
   b) Draw the signal wavelength when D0110111 is transmitted using following codes
      i) NRZ-L ii) NRZ-M.
   c) What are simplex, half duplex and full duplex data transmission?
   d) What are the modes of data transmission? Explain with examples.

OR

Describe briefly about line configurations with diagrams.

Unit - III

3. a) What is Modem? Which modulation technique is used in modem?
   b) What do you understand by pulse code modulation?
   c) Compare PDH and SDH.
   d) Two channels, one with bit rate of 150 kbps and another with a bit rate of 400 kbps, are to be multiplexed using pulse stuffing TDM with no synchronization bits.
      i) What is the size of the frame in bits?
      ii) What is frame rate and data rate?

OR

What is TDM? Explain synchronous and statistical TDM.

Unit - IV

4. a) Write down the different types of switching techniques.
   b) What is CRC? Why it is used?
   c) List out the methods available for error detection.
   d) Detect and correct single error in the received hamming code word 10110010111. (Assume even parity)

OR

Explain ISDN briefly.

Unit - V

5. a) What is the difference between unshielded and shielded twisted pair cables?
   b) Write the specification of RJ-45 and RJ-11.
   c) What do you understand by radiowaves, microwaves and infra-red transmission?
   d) Draw and explain fiber optic communication system. What are the reasons by which fiber degrades the signal?

OR

Explain briefly about transmission media.

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