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

Roll No .....

EI/IC-601

B.E. VI Semester

Examination, June 2016

Data Communication and Computer Networks

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 questions 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.

1. a) What is Multiplexing?
   b) Define channel capacity.
   c) Distinguish between baud rate and bit rate.
   d) Assuming a synchronous transmission control scheme, explain how character and frame synchronization are achieved :
      i) with character oriented transmission
      ii) with bit-oriented transmission

   OR

   With suitable examples explain simplex, half duplex and full duplex communication.

2. a) List the features provided by serial interface.
   b) List the advantages and disadvantages of RS232C.
   c) What is X.21 standard?
   d) Discuss in detail about broad band ISDN.

   OR

Describe the physical, electrical and functional characteristics of the RS-232 interface.

3. a) What is WAN?
   b) What is Circuit Switching?
   c) What is Packet Switching?
   d) How is TCP/IP model different from other models? What do you mean by TCP/IP?

   OR

   Explain how data is transmitted and received in a seven layers OSI model.

4. a) What is Parity Bit?
   b) What is CRC Code?
   c) Define forward error correction.
   d) What is meant by ARQ? Which ARQ scheme has best system utilization? Prove your statement.

   OR

   Discuss the various modes of operation of HDLC protocol. What are supervisory frames?

5. a) What is Medium Access Control?
   b) What is Polling?
   c) What is 10 Gigabit Ethernet?
   d) With the aid of sketch, explain how a collision can occur with the CSMA/CD MAC method.

   OR

   Consider building a CSMA/CD networking running at 1Gpbs over a 1 km cable with no repeaters. The signal speed in the cable is 2,00,000 km/sec, what is the minimum frame size?

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