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(Following Paper ID and Roll No. to be filled in your Answer Book)

Paper ID : 174712 Roll No. | | | | | | | | | | |

B.Tech.

(SEM. VII) THEORY EXAMINATION, 2015-16

DATA COMMUNICATION NETWORKS

Time : 3 hours] [MaximumMarks : 100

Part-A

1. Attempt all sections. All sections carry **equal** marks. Write answer of each sections in short. 2×10=20

   (a) What do you mean by de jure and de facto standards?

   (b) What are the fundamental characteristics on which the effectiveness of data communication depends on?

   (c) What are the advantages of distributed processing?

   (d) What are the three criteria necessary for an effective and efficient network?

(e) Give the frame format of IEEE standards 802 for LAN.

(f) What are the responsibilities of physical layer data link layer?

(g) For n devices in a network, what is the number of cable links necessary for mesh, ring, and bus and star networks?

(h) What is the purpose of the timer at the sender site in systems using ARQ?

(i) Give data transfer modes of HDLC?

(j) How TCP diffwer from the sliding window protocols.

Section-B

Note: Attempt **any five** questions from this sections.

10×5=50

Q2. Explain and compare the performance of different line coding scheme.

Q3. Explain IPv4 and IPv6 Internet protocol.

Q4. Explain in short IEEE standards 802 for LAN.

Q5. Define and explain the various frame type in HDLC. Design a three stage 200 X switch with K=4 and n=20.

Q6. How do we say collision detection is analog process? Why do we prefer CSMA over ALOHA? Prove that maximum efficiency of ALOHA is 1/e.

Q7. Discuss the various design issue involved in ATM Technology and also explain the different layers of ATM.

Q8. Write a short note on:

(i) Message Integrity

(ii) Digital Signature

(iii) Cryptography

Q9. Explain the CRC error detection technique generator polynomial X^4+X^3+1 and data is 11100011.

Section-C

Note: Attempt **any two** questions. 2×15=30

Q10. What is the various design issues involved in the network layer? What do you mean by introdomain and interdomain routing techniques? Explain link state routing with suitable example.

Q11 What do you mean by layered architecture? Explain the roll of each layer in OSI Model.

Q12. Explain controlled access method and Discuss CSMA/ CA random access method.

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