8E4088

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B.Tech. (Sem.VIII) (Main/Back) Examination, April/May - 2012
Electronics & Communication
8EC1 Computer Networks

Time : 3 Hours [Total Marks : 80
[Min. Passing Marks : 24

*Attempt any **five questions** selecting **one question** from **each unit**. All questions carry equal marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

UNIT - I

1. (a) Derive the steady equations of Birth-Death process. **8**
   (b) What is renewal process? Differentiate it with ordinary B-D process. **8**

OR

1. (a) Discuss the discrete time discrete state Markov process. **8**
   (b) A group of users in a computer browsing center has 2 terminals. The average computing job requires 20 min of terminal time and each user requires some computation about once every half an hour. Assume that the arrival rate is poisson and service rate is exponential and the group contains 6 users. Evaluate : The average number of users waiting to use one of the terminals and in the computing job. **8**

UNIT - II

2. (a) Explain the stop and wait protocol and also state drawbacks of stop and wait protocol. **10**
   (b) Calculate CRC for a 10-bit sequence 1010011110. The generator polynomial is $x^3 + x + 1$. **6**

OR

2. (a) Draw and explain the frame structure of HDLC. **10**
   (b) Briefly explain piggybacking and bit stuffing. **6**

UNIT - III

3. (a) Compare pure ALOHA and slotted ALOHA. **8**
   (b) Explain CSMA/CD and its uses. **8**

OR

3. (a) Discuss different carrier sense protocols. How are they different than collision free protocols? **10**
   (b) Explain the physical properties of ethernet. **6**

UNIT - IV

4. (a) What is meant by firewall? Explain proxy server gateway.
   (b) What do you mean by fragmentation? Compare transparent and non-transparent fragmentations.

OR

   (a) Compare IPV_4 and IPV_6.
   (b) Differentiate among unicasting, multicasting and broadcasting.

UNIT - V

5. How does ATM differ from relay? Define the ATM service classes. What are the services provided by AAC

OR

5. (a) What is ISDN? Describe in brief the ISDN working to provide various services.
   (b) Compare ATM layered architecture with OSI model.