8E4088

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B. Tech. VIII Sem. (Main/Back) Exam., April, 2015
Electronics & Communication Engineering
8EC1 Computer Networks

Time: 3 Hours **Maximum Marks: 80**

Min. Passing Marks: 24

Instructions to Candidates:

*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.

Use of following supporting material is permitted during examination.

1. NIL 2. NIL

UNIT – I

Q.1 Define birth and death process. Obtain its steady state probabilities. How it could be used to find the steady state solution for the M/M/1 model? [16]

OR

Q.1 (a) Explain how queuing theory could be used to study computer networks. [8]

(b) Find the steady state solution for the multiserver M/M/C model and hence find L_g, W_g, W_s and L_s by using Little formula. [8]

UNIT – II

Q.2 (a) What is the difference between Internet architecture and OSI architecture? [8]

(b) Write short note on error detection and correction? Show how the following data 000111111100111110100 would change when bit stuffing is applied on it. [8]

OR

Q.2 (a) What are the responsibilities of data link layer? Explain the different approaches of framing. [12]

(b) Discuss simplex stop and wait protocol. [4]

UNIT – III

Q.3 Describe the FDDI frame format and explain. Write the advantages of FDDI over a basic taken ring. [16]

OR

Q.3 (a) Name the four basic network topologies and explain them giving all the relevant features. [8]

(b) Explain the working of ALOHA and SLOTTED ALOHA. [8]

UNIT – IV

Q.4 (a) Explain the TCP transmission policy, congestion control. [8]

(b) Explain the building and distribution of link state packets in link state routing algorithms. [8]

OR

Q.4 (a) Explain a congestion control algorithm for TCP/IP networks. [8]

(b) Explain OSPF with suitable illustration. [6]

(c) Why is adaptive routing superior to non adaptive routing? [2]

UNIT – V

Q.5 Diagrammatically illustrate and discuss the ATM architecture. [16]

OR

Q.5 (a) What is the need for frame relay? How does it differ from conventional packet switching? What are the functions of its layers? [8]

(b) How does ATM achieve high speed switching? And how congestion is controlled in ATM networks? [8]
