8E8024

Roll No. _____ [Total No. of Pages : 3

8E8024

B.Tech. VIII Semester (Main/Back) Examination, April/May - 2017
Electronic Instrumentation and Control Engg.
8EI4.3A Computer Networks
EC & EI

Time : 3 Hours **Maximum Marks : 80**
Min. Passing Marks : 26

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 suitable be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

Unit-I

1. In M/M/1 queuing system calculate average waiting time of packet in the queue (Time until the start of service to the packet). **(4)**

i) Draw state transition diagram for M/M/m/m queuing system. Write flow balance equation for the given queue. **(6)**

ii) What is the queuing model? How you characterize queuing model? **(6)**

(OR)

1. Explain little's law with an example. **(4)**

i) Describe pure birth and birth-death processes with the help of suitable example. **(8)**

ii) Explain Kendalls Notation in detail. **(4)**

Unit-II

2. What is TCP/IP model? Explain the functions, and protocols and Services of each layer? Compare it with OSI model. **(16)**

(OR)

2. a) Discuss the principal of stop and wait flow control algorithm. Draw time line diagram and explain how loss of a frame and loss of an ACK are handled. What is the effect of delay-bandwidth product on link utilization. Differentiate it with sliding window protocol. **(8)**

   b) What are the disadvantages of circuit switching? Compare it with packet switching in detail. Also write, which of these switching you prefer for telephone networks and why? **(8)**

Unit-III

3. a) What is pure ALOHA and slotted ALOHA? Compare both. Consider the delay of both at low load, which one is less? Explain your answer. **(8)**

   b) Explain the token passing technologies used in FDDI. How are new tokens generated on FDDI network? What advantages does this method have when adding and deleting stations to/from the network of when error occurs. **(8)**

(OR)

3. a) Explain in detail CSMA/CD protocol and comment on its performance for medium access. How it detect collision. **(8)**

   b) How does ATM differ from relay? Explain the ATM layered architecture in detail. **(8)**

Unit-IV

4. a) What is the difference between adaptive and non adaptive algorithm? Explain each algorithm briefly. **(8)**

   b) Explain OSPF and types of links defined by OSPF. **(8)**

(OR)

4. a) Explain IPV6 fixed header. Also explain the various extension headers used in IPV6. **(8)**

   b) What are ARP and RARP explain in detail? **(8)**

Unit-V

5. Answer the following questions associate with congestion control. **(4×4=16)**

   i) Differentiate between token bucket and leaky bucket algorithm.

   ii) Describe all the parameters used in flow specification technique.

   iii) Rate based congestion algorithm.

iv) Choke packets and jitter control.

(OR)

5. a) Discuss the need of name resolution. Illustrate the domain name hierarchy and the steps in resolution. **(8)**

b) Describe the message format and the message transfer and the underlying protocol involved in the working of the electronic mail. **(4)**

c) Let the value of the RTT (Round Trip Time) is to be measured. The value of previous RTT be 350 μ sec. Let the value of L be 90% calculate the new RTT. Hence calculate the transmission time. Assume it takes segment at this moment to be acknowledgment in 90 μs. **(4)**