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05SCS/SCE23

Second Semester M.Tech. Degree Examination, Dec. 07 / Jan. 08
Computer Networks

Time: 3 hrs. Max. Marks:100

Note : ***Answer any FIVE full questions.***

1 a. What is the need of layering? What are the functions of layers? **(03 Marks)**

b. Define multiplexing? What are the methods for multiplexing multiple logical channels to one physical channel? Explain their limitation. How it is overcome? **(13 Marks)**

c. Calculate the total time required to transfer 1000 kb file in the following cases assuming an RTT of 100 ms, a packet size of 1 kB and an initial 2 × RTT of "handshaking" before data is sent.

i) The bandwidth is 1.5 Mbps and data packets are sent continuously.

ii) The bandwidth is 1.5 Mbps, but after we finish sending each data packet we must wait one RTT before sending the next. **(04 Marks)**

2 a. What is the need of encoding? Explain NRZ and Manchester encoding scheme. **(08 Marks)**

b. Explain how media access is controlled in token ring. **(06 Marks)**

c. What are the roles that the sliding window protocol can serve and also explain go-back-N protocol with example? **(06 Marks)**

3 a. Give the steps involved in building up the spanning tree. Give the spanning tree generated for the extended LAN given below. Also give limitations of bridges.

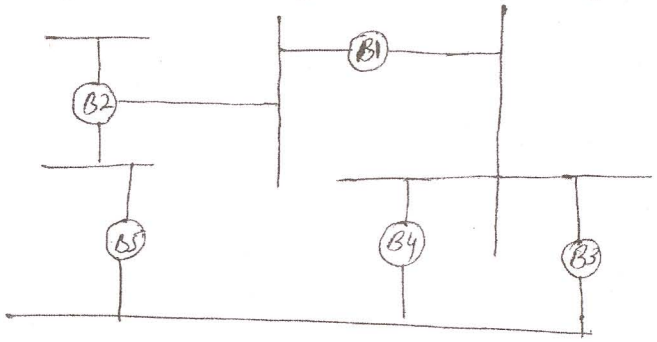

Fig.3(a) **(12 Marks)**

b. Why in ATM, cells must be of fixed length? **(03 Marks)**

c. What are the advantages and disadvantages of tunneling? **(05 Marks)**

4 a. With figure explain IPV4 header format. **(08 Marks)**

b. Differentiate static and dynamic routing algorithm. **(06 Marks)**

c. For the Fig.4(c) shown give the distance vector table for router E. Also give the difference between link state and distance vector routing algorithm.

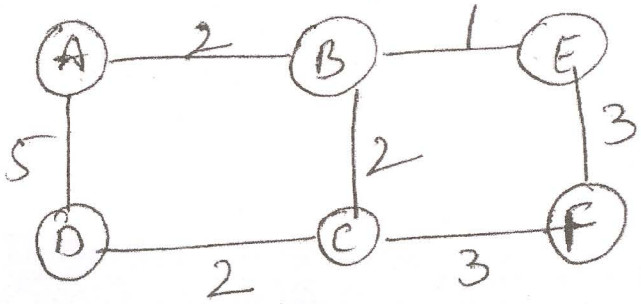

Fig.4(c) **(06 Marks)**

5 a. Explain TCP state transition diagram with figure. **(10 Marks)**
b. Explain silly window syndrome and Nagle's algorithm. **(10 Marks)**

6 a. What are the different ways in which resource allocation mechanism differs? Explain. **(08 Marks)**
b. Explain with figure TCP congestion control. **(09 Marks)**
c. Differentiate between flow control and congestion control. **(03 Marks)**

7 a. Given a hierarchy of name server show how client resolves a domain name. **(06 Marks)**
b. What are the functions to be provided by RIP? Explain. **(06 Marks)**
c. With figure explain message flow for a basic SIP message. **(08 Marks)**

8 a. Briefly explain management information of SNMPV2. **(10 Marks)**
b. Explain the different ways of addressing framing problem. **(10 Marks)**

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