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10EC/TE71

Seventh Semester B.E. Degree Examination, Dec.2016/Jan.2017
Computer Communication Network

Time: 3 hrs. Max. Marks:100

Note: *Answer FIVE full questions, selecting at least TWO questions from each part.*

PART – A

1 a. With layer diagram, explain the responsibility of each layer in OSI model. **(09 Marks)**

b. Explain the operation of ADSL using discrete multitone modulation with a neat diagram. **(06 Marks)**

c. List different types of addressing in TCP. Explain any one type of addressing with a suitable example. **(05 Marks)**

2 a. Distinguish character stuffing and bit stuffing, with an example. **(04 Marks)**

b. Explain different HDLC frames. **(06 Marks)**

c. What are sliding window protocols? Design Go-Back-N ARQ protocol for noisy channel. **(10 Marks)**

3 a. Explain non persistant, *1*-persistent and p-persistent with flow diagram. **(06 Marks)**

b. Explain Token passing as a controlled access technique. **(04 Marks)**

c. With a suitable example, explain data communication on a CDMA/CD network. Also list the properties of chip Sequences. **(10 Marks)**

4 a. Explain addressing mechanism used in IEEE 802.11. **(06 Marks)**

b. Explain the standard Ethernet physical layer implementation of, (i) 10 base 2 (ii) 10 base 5 (iii) Twisted pair Ethernet (iv) Fibre Ethernet. **(08 Marks)**

c. Explain the IEEE 802.3 MAC frame format of standard Ethernet. **(06 Marks)**

PART – B

5 a. Explain spanning tree algorithm with graphical representation. **(06 Marks)**

b. Explain the characteristics of VLAN used to group stations and explain them briefly. **(06 Marks)**

c. Explain the following interconnecting devices:
(i) Repeater (ii) Bridges (iii) Router (iv) Gateway **(08 Marks)**

6 a. Compare between IPV4 and IPV6 extension headers. **(06 Marks)**

b. Describe three strategies devised by IETF to help transition from IPV4 to IPV6. **(06 Marks)**

c. An ISP is granted a block of address strating with 190.100.0.0/16 the ISP needs to distribute these addresses to three group of customers as follows:
i) The first group has 64 customers, each need 256 addresses.
ii) The second group has 128 customers, each need 128 addresses.
iii) The third group has 128 customers, each need 64 addresses.
Design sub blocks and find out how many addresses are still available after these allocations. **(08 Marks)**

7 a. Write short notes on :
   i) Forwarding process.
   ii) Address aggregation.
   iii) Dynamic routing table. **(15 Marks)**

   b. What are the basis for classification of four types of links defined by OSPF? **(05 Marks)**

8 a. With a neat diagram, explain briefly connection establishment, date transfer, connection termination and half close connection in TCP. **(12 Marks)**

   b. With regards to DNS in internet,
   i) Explain briefly recursive and iterative resolution.
   ii) Query and response messages. **(08 Marks)**

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