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Roll No.

322674(22)

B. E. (Sixth Semester) Examination, April-May 2020

(New Scheme)

(CSE Engg. Branch)

INTER-NETWORKING with TCP/IP

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Attempt all five questions. Part (a) of each unit is compulsory. Attempt any two parts from (b), (c) and (d) of each unit.

Unit-I

1. (a) Define Gateway. 2

(b) How the numbers of cross-points reduced in the

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multistage switch having 03 stages, show with example? And explain different types of switches. 7

(c) Explain TCP/IP reference model. 7

(d) Explain packet-switching and what advantage does a circuit-switched network have over a packet switched network. 7

Unit-II

2. (a) Define class full addressing. 2

(b) A host with IP addresses 130.23.43.20 and physical address B2 : 34 : 55 : 10 : 22 : 10 has a packet to send to another host with IP address 130.23.43.25 and physical address A4 6E : F4 : 59 : 83 : AB. The two hosts are on the same Ethernet network.

Answer the following :

(i) Which protocol is used to identify physical address of the receiver? Explain the operation performed by the protocol to obtain physical address also show the values in packets send by both devices encapsulated in Ethernet frames.

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(ii) Which protocol is used to identify IP addresses of sender? Explain the operation performed by the protocol to obtain IP address also show the values in packets send by both devices encapsulated in Ethernet frames. 7

(c) A company is granted the site address 181.56.0.0 (class B). The company needs 1000 subjects. Design the subnets. 7

(d) Explain IPv4 header format and differentiate between IPv4 and IPv6. 7

Unit-III

3. (a) Change the multicast IP address 232.43.14.7 to an Ethernet multicast physical address. 2

(b) Explain with the help of diagram the three steps to create source-based multicast tree in DVMRP. 7

(c) Explain working of BGP. 7

(d) Explain working of RIP in steps also write its performance. 7

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Unit-IV

4. (a) Define UDP. 2
- (b) Draw diagram of send window and receive window used in TCP and explain working of sliding window with the help of diagram. 7
- (c) In TCP, connection-oriented transmission requires three phases : connection establishment, data transfer, and connection termination. Explain the three phases with the help of flow diagram showing feollowing fields of segments : 7
- (i) Sequence number
 - (ii) ACK number
 - (iii) Flags
 - (iv) Window size
- (d) Explain token bucket algorithm and initially the bucket is full of token when 1 Mb burst arrive at the rate 25 Mb/Sec, the token bucket capacity is 500 kb, token arrives at the rate 2Mb/Sec and maximum output rate is 25 Mb/Sec. Calculate burst length and total time to drain 1 Mb data with no data lost? 7

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Unit-V

5. (a) Define ATM Network. 2
- (b) Explain how virtual circuit connection created in ATM network between client and server? 7
- (c) Explain ATM reference model and write functions of each layer? 7
- (d) Explain ISDN. 7

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