53 (CS 402) CPNT

2014

COMPUTER NETWORKS

Paper : CS 402

Full Marks : 100

Pass Marks : 30

Time : Three hours

The figures in the margin indicate full marks
***for the questions.***

*Answer **any 5 (five)** questions out of 7 (seven).*

1. *(a)* Explain the layered architecture of TCP/IP protocol suite. 8

   (b) Discuss *any four* types of transmission media taking two from each group (guided and unguided). 6+6=12

2. *(a)* Discuss the *three* different switching techniques. 6

(b) What do you mean by framing ? 3

(c) Write the various steps involved in internet checksum method for error detection in the data link layer. 5

(d) Explain go-back-N ARQ protocol with a neat diagram. 6

3. (a) How slotted ALOHA can improve the performance of pure ALOHA ? Explain with an example. 7

(b) Explain CSMA/CA protocol. 6

(c) How data packets are sent from one node to another in a token ring network ? 3

(d) Compare TDMA with FDMA. 4

4. (a) Mention the differences between virtual circuit and datagram networks. 6

(b) What do you mean by routing ? Differentiate between adaptive and non-adaptive routing algorithms. 2+4=6

(c) Consider the network given below and construct the routing table for router A using Dijkstra's shortest path algorithm. 5
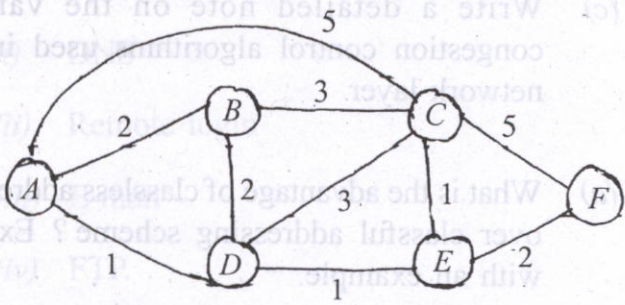
(d) What do you mean by flooding? 3

5. *(a)* Use link state routing in the network given below and show how the routing table is created for the router *R*1. Mention each of the steps explicitly. 6
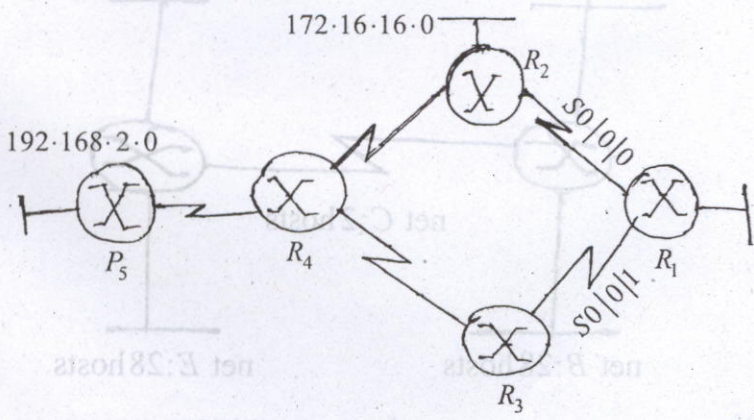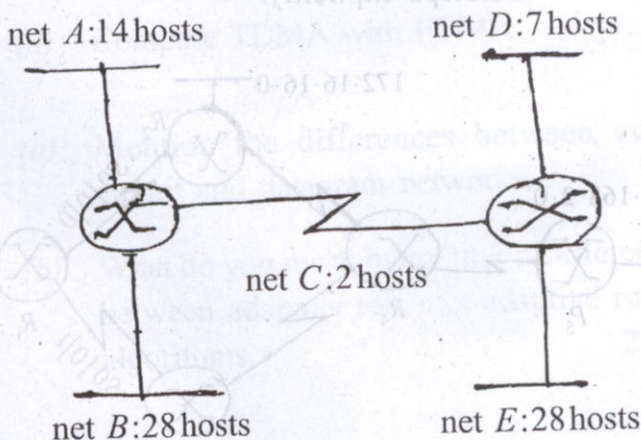
(b) What are the advantages of link state routing over distance vector routing ?   4

(c) Write a detailed note on the various congestion control algorithms used in the network layer.   10

6. *(a)* What is the advantage of classless addressing over classful addressing scheme ? Explain with an example.   3

(b) Given a class C network of 204·15·5·0/24, use variable length subnet masking and subnet the network according to the figure given below with the host requirements shown :   7

net A:14 hosts   net D:7 hosts

net C:2 hosts

net B:28 hosts   net E:28 hosts

(c) Describe the various services of TCP. How is it different from UDP ?   8+2=10

7. Write short notes on :   4×5=20

   (i)   DNS

   (ii) Remote login

   (iii) E-mail

   (iv) FTP.

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