

Total number of printed pages-4

53 (CS 402) CPNT

2017

COMPUTER NETWORK

Paper : CS 402

Full Marks : 100

Time : Three hours

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

Answer **any five** questions.

1. (a) Explain the OSI reference model with diagram.
(b) Define the following :
(i) Switch, (ii) Repeater, (iii) Bridge,
(iv) Router, (v) Gateway.
10+(5×2)
2. (a) Explain with the help of an example how error checking is done in a network using Cyclic Redundancy Check (CRC) technique.

Contd.

(b) Explain how a stop-and-wait protocol differs for a noisy channel from that of a noiseless channel.

(c) Discuss the sliding window protocol used in data link layer.

8+4+8

3. (a) Assume a Go-Back-N ARQ protocol is used with a window size of 4 and the ACK packet 2 gets lost. Show the events until packet 2 is acknowledged at the sender side.

(b) When do collision occur? How does CSMA/CD detect and handle collision?

(c) Explain CDMA with the help of an example.

4+(2+6)+8

4. (a) State the differences between a datagram network and a virtual-circuit network.

4

(b) Define static and dynamic routing.

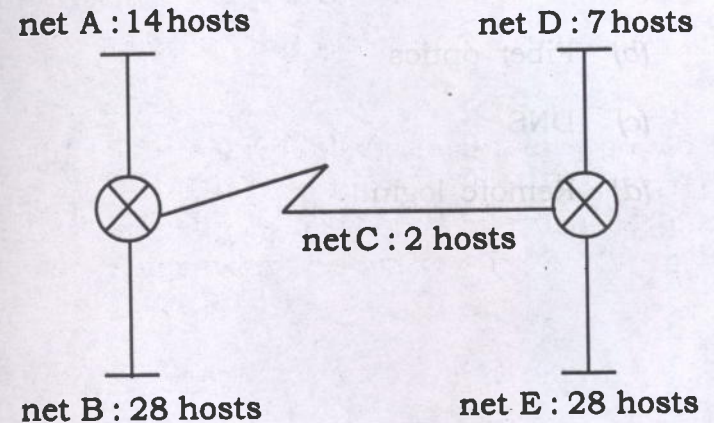
2+2

(c) Explain the working of a link state routing protocol with the help of an example. State the advantages of link state routing over distance vector routing.

8+4

5. (a) What do you mean by subnetting? Given the class C network of 205.15.15.0/24, use variable length subnet masking in order to create the network in the figure below with the host requirements shown.

3+7



(b) Discuss the various congestion control mechanisms.

10

6. (a) List out the various TCP services.

10

(b) TCP is a reliable transport layer protocol but UDP is not. Still UDP is used sometimes, explain why. Also list out some examples where UDP is preferred to TCP.

5

(c) Explain in brief the client/server architecture for communication in a network. 5

7. Write short notes on : 4×5

(a) Network topologies

(b) Fiber optics

(c) DNS

(d) Remote login.