53 (CS 402) CPNW

2016

COMPUTER NETWORKS

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 layered architecture of TCP/IP protocol suit. 8

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

   (c) How channel capacity is doubled in slotted ALOHA than pure ALOHA ? 6

2. *(a)* Explain different network topologies with their merits and demerits. Which topology is widely used and why ?
8+2=10

(b) What is forward error correction ? A bit stream 10011101 is transmitted using the standard CRC. The generator polynomial is x^3+1. Show the actual bit stream transmitted. Suppose the third bit from the left is invested during transmission, show that the error is detected at the receiver's end.
2+8=10

3. *(a)* Explain pipelining and error recovery in Go Back N protocol when receiver window size is 1 and receiver window size is large. 10

(b) Explain distance vector routing algorithm with a suitable example. Mention its merits and demerits.
8+2=10

4. *(a)* What do you mean by congestion ? Discuss the congestion prevention policies in transport layer. 2+8=10

(b) What is the advantage of traffic shaping? Describe the token bucket algorithm. What is the difference between token bucket and leaky bucket algorithm ? 3+4+3=10

5. (a) What do you understand by "three way handshake" ? Explain TCP segment header. Differentiate between TCP and UDP protocols. 4+6+4=14

(b) What are the network number, subnet number and host number for the address 135.104.192.100 and mask 255.255.128.0 ? 6

6. (a) What are the deficiencies of IPv4 ? How IPv6 was modified to overcome these deficiencies ? What are the advantages of IPv6 ? 4+4+2=10

(b) What is DNS ? What is the primary purpose of DNS ? 2+4=6

(c) Explain the differences between HTTP and HTTPS. 4

7. Write short notes on the following : ***(any four)*** 5×4=20

(i) Remote login

(ii) Flow control and error control

(iii) Packet switching vs circuit switching

(iv) Shielded twisted pair and Unshielded twisted pair cable

(v) bit stuffing and byte stuffing

(vi) Optical fiber.
