Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 31307

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

Fifth Semester

Computer Science and Engineering

CS 2302/CS 52 – COMPUTER NETWORKS

(Common to Information Technology)

(Common to PTCS 2302 – Computer Networks for B.E. (Part – Time)
Fourth Semester CSE – Regulations 2009)

(Regulation 2008)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define a layer.

2. What do you mean by framing?

3. List the main two limitations of bridges.

4. Define source routing.

5. What is the need of subnetting.

6. What is the need for ARP?

7. Differentiate flow control and congestion control.

8. Differentiate between delay and jilter.

9. What DNS cache issues are involved in changing the IP address of a web server host name?

10. Differentiate application programs and application protocols.

PART B — (5 × 16 = 80 marks)

11. (a) (i)   Explain NRZ,NRZI and Manchester encoding schemes with examples.   (8)

    (ii) Describe how bit stuffing works in HDLC protocol.   (8)

Or

(b) (i) Discuss the issues in the data link layer. (4)

(ii) Suppose we want to transmit the message 11001001 and protect it from errors using the CRC polynomial $x^3 + 1$. Use polynomial long division to determine the message that should be transmitted. (12)

12. (a) (i) Describe the transmitter algorithm implemented at the sender side of the Ethernet protocol. Why should Ethernet frame should be 512 bytes long? (10)

(ii) Explain how the hidden node and exposed node problem is addressed in 802.11? (6)

Or

(b) Describe how MAC protocol operates on a token ring. (16)

13. (a) (i) Suppose hosts A and B have been assigned the same IP address on the same Ethernet, on which ARP is used. B starts up after A. What will happen to A's existing connections? Explain how 'self-ARP' might help with this problem. (4)

(ii) Describe with example how CIDR addresses the two scaling concerns in the internet. (12)

Or

(b) Describe the Distance vector routing protocol with examples. (16)

14. (a) (i) Describe how reliable and ordered delivery is achieved through TCP. (8)

(ii) Why does TCP uses an adaptive retransmission and describe it's mechanism. (8)

Or

(b) Describe with examples the three mechanism by which congestion control is achieved in TCP. (16)

15. (a) Describe the message format and the message transfer and the underlying protocol involved in the working of the electronic mail. (16)

Or

(b) Explain with example :

(i) HTTP (8)

(ii) RTP. (8)

———————