B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2011

Sixth Semester

Electrical and Electronics Engineering

CS 2363 — COMPUTER NETWORKS

(Regulation 2008)

Time : Three Hours Maximum : 100 marks

Answer ALL questions

PART A — (10 × 2 = 20 marks)

1. Write the categories of networks.

2. A network with bandwidth of 10 Mbps can pass only an average of 12,000 frames per minute with each frame carrying an average of 10,000 bits. What is the throughput of this network?

3. Differentiate ARP and RARP.

4. Give the CIDR notation for Class A, B and C.

5. Draw the datagram format of UDP.

6. Define flow control.

7. What is cipher text?

8. List out the two modes of IP security.

9. What is DNS?

10. How is HTTP related to WWW?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Discuss the four basic network topologies and give the advantages and disadvantages of each type. (8)

(ii) Explain the various factors contributing to the network performance. (8)

Or

(b) (i) With a suitable diagram explain briefly about

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(1) Virtual circuit switching

(2) Datagram switching techniques. (10)

(ii) Explain the Unipolar and Polar encoding schemes with suitable example. (6)

12. (a) Illustrate with a neat sketch, the IPV 4 datagram format. Compare the fields in the main headers of IPV 4 and IPV 6. (16)

Or

(b) Describe briefly the following :

(i) Internet control message protocol. (12)

(ii) Find the class and CIDR notation of each address

(1) 11000001 10000011 00011011 1111 1111

(2) 14.23.120. 8. (4)

13. (a) Describe in detail about TCP segment, features and connection management. (16)

Or

(b) (i) Briefly explain the techniques to improve QOS. (10)

(ii) Discuss various categories of congestion control. (6)

14. (a) (i) Explain the method of compressing the image by using JPEG. (8)

(ii) Discuss in detail about symmetric-key cryptography. (8)

Or

(b) (i) Describe how PGP can be used to provide security at the application layer. (10)

(ii) Explain how the firewall can prevent a system from harmful

message? (6)

15. (a) Explain the working of electronic mail. Describe how the SMTP is used in E-mail applications. (16)

Or

(b) (i) Briefly explain simple network management protocol (SNMP). (8)

(ii) Discuss the File Transfer Protocol (FTP) with suitable diagrams. (8)