Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 60385

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

Fifth Semester

Computer Science and Engineering

CS 2302/CS 52/10144 CS 503 — COMPUTER NETWORKS

(Common to Information Technology)

(Regulations 2008/2010)

(Common to PTCS 2302 – Computer Networks for B.E. (Part-Time) Fourth Semester CSE –Regulations 2009 and 10144 CS 503 — Data Communication and Computer Networks for B.E.(Part-Time) Fifth Semester CSE – Regulations 2010)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. State Demorgan's theorem.

2. Draw the symbolic representation of NAND gate and also truth table.

3. Differentiate fast ethernet and gigabit ethernet.

4. What is the difference between switch and bridge?

5. What are the responsibilities of network layer?

6. What are datagrams?

7. Differentiate flow control and congestion control.

8. Differentiate between delay and jilter.

9. What are the advantages of allowing persistent TCP connections in HTTP?

10. Is a cryptographic hash function an irreversible mapping? Justify your answer.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Draw and explain the function of each layers in OSI model. (8)

(ii) Write a note on any two physical link. (8)

Or

(b) (i) Describe any one technique used for error detection. (6)

(ii) Let $g_1(x) = x + 1$ and let $g_2(x) = x^3 + x^2 + 1$. Consider the information bits (1,1,0,1,1,0). Find the codeword corresponding to these information bits if $g_1(x)$ is used as the generating polynomial. Find the codeword corresponding to these information bits if $g_2(x)$ is used as the generating polynomial. Can $g_2(x)$ detect single errors? double errors? triple errors? If not, give an example of an error pattern that cannot be detected. Find the codeword corresponding to these information bits if $g(x) = g_1(x)g_2(x)$ is used as the generating polynomial. Comment on the error-detecting capabilities of $g(x)$. (10)

12. (a) Explain the physical properties of Ethernet 802.3 . with necessary diagram of Ethernet transceiver and adaptor. (16)

Or

(b) (i) How does a Bridge Come to learn on which port the various hosts reside? Explain with an examples. (8)

(ii) Write briefly about CSMA. (8)

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) Explain the method of congestion avoidance.

Or

(b) Explain about UDP and ICP features with neat diagrammatic representation.

15. (a) Discuss the need for name resolution. Illustrate the domain name hierarchy and the steps in resolution.

Or

(b) (i) Illustrate the features of FTP and its operation. (8)

(ii) Illustrate the features of TELNET. What is the need for network virtual terminal? (8)
