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Question Paper Code : X 60382

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2020

Fifth Semester

Computer Science and Engineering

CS 2302/CS 52 – COMPUTER NETWORKS

(Common to Information Technology)

(Regulations 2008)

(Also Common to PTCS 2302 – Computer Networks for B.E. (Part-Time)

Fourth Semester – CSE – Regulations 2009)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. Give the purpose of layering.
2. Mention the advantage and disadvantage of error correction by receiver, as compared to error detection.
3. Mention the drawback of CSMA.
4. Draw the architecture of wireless LAN.
5. What are the responsibilities of network layer ?
6. What are datagrams ?
7. Diagrammatically represent the 3-way handshake for TCP connection establishment.
8. What is the need of Urgent pointer ?
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) 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 code word 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)

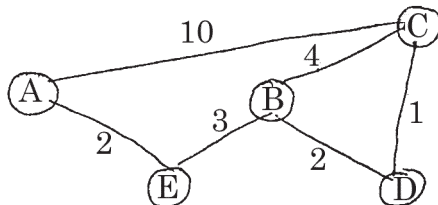
(OR)

- b) i) How does a Bridge Come to learn on which port the various hosts reside? Explain with an example. (8)
 ii) Write briefly about CSMA. (8)

13. a) i) A 4480-byte datagram is to be transmitted through an ethernet with a maximum data size of 1500 bytes in frames. Show the values of Total Length, M Flag, identification and fragment offset fields in each of the fragments created out of the datagram. (10)
 ii) Discuss the principles of reliable flooding and its advantages and applications. (6)

(OR)

- b) i) For the following network, develop the datagram forwarding table for all the nodes. The links are labelled with relative costs. The tables should forward each packet via the least cost path to destination. (10)



- ii) What is the need for ICMP? Mention any four ICMP messages and their purpose. (6)



14. a) i) With a neat diagram of TCP header format, explain the function and need of the attributes that helps in connection establishment, data transmission and connection termination. (8)
- ii) Describe in different congestion avoidance techniques. (8)
- (OR)
- b) i) How adaptive retransmission is working ? Explain. (8)
- ii) Explain UDP functions with the neat diagram. (8)
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)
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