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Question Paper Code: 94806

B.E./B.Tech. DEGREE EXAMINATION, APRIL 2024

Fourth Semester

Information technology

19UIT406- COMPUTER NETWORK

(Regulations 2019)

Duration: Three hours

Maximum: 100 Marks

Answer All Questions

PART A - (10x 2 = 20 Marks)

1. Five channels, each with a 100 -kHz bandwidth, are to be multiplexed together. What is the minimum bandwidth of the link if there is a need for a guard band of 10kHz the link if there is a need for a guard band of 10 kHz between the channels to prevent interference? CO1- App
2. Assume that a voice channel occupies a bandwidth of 4 kHz .We need to Combine three voice channels into a link kHz .We need to combine three Voice channels into a link with a bandwidth of 12 kHz, from 20 to 32 kHz. Show the configuration, using the frequency domain. Assume there are no guard bands configuration, using the frequency domain. Assume there are no guard bands CO1- App
3. Write the difference between pure aloha and slotted aloha CO2- U
4. Define Error correction and Error detection. CO2- U
5. What is meant by logical addressing? CO3- U
6. Draw the sketch of IPv4 packet header CO3- U
7. What are the services provided by transport layer protocol? CO4- U
8. What are the techniques to improve QOS? CO4- U
9. Compare the key principle, advantage and disadvantages of POP3 and IMAP CO5- Ana
10. Give the format of HTTP request and response message. CO5- U

PART – B (5 x 16= 80Marks)

11. (a) Compare and Contrast the different types of LAN and Show how a LAN Network is interconnected with switches, hub, and router and explain in detail About it. CO1-App (16)
- Or
- (b) Compare and contrast in detail about Wireless Communication techniques CO1-App (16)
- (i) Guided Medium
(ii) Unguided medium
12. (a) A bit stream 1101011011 is transmitted using the standard CRC method. The generator polynomial is x^4+x+1 . What is the actual bit string transmitted? Apply CRC checker and find whether there is any error in data transmission CO2-App (16)
- Or
- (b) Apply the error correction techniques for the given inputs data bits to be transmitted is 1011001 and number of redundancy bits = 4 and Determining the even parity bits for allotted 11 bits. CO2-App (16)
13. (a) Explain in detail about the types, key principles and methodology of routing protocols in network layer with neat diagrammatical representation CO3-U (16)
- Or
- (b) Explain in detail about the circuit switching and packet switching with neat diagrammatical representation CO3-U (16)
14. (a) Compare the QOS in terms of Integrated Services and Differentiated Services. And also list out the algorithm in traffic shaping with neat diagrammatical explanation CO4-Ana (16)
- Or
- (b) Examine the Three Way Handshake protocol to establish the transport level connection. And also Analyze in detail about various Services provided by the Transport Layer CO4-Ana (16)

15. (a) Give one reason why a firewall might be configured to inspect incoming traffic. And on outgoing traffic. Do you think the inspections are likely to be successful? CO5- Ana (16)

Or

(b) Analyze the basics of POP3 and IMAP mail access protocols and examine the message transfer using Simple Mail Transfer Protocol. CO5- Ana (16)

