SHRI ANGALAMMAN COLLEGE OF ENGINEERING & TECHNOLOGY
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SIRUGANOOR,TRICHY-621105.

FS 81504

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Year/Sem: III/V

CS1302-COMPUTER NETWORKS

UNIT – I -DATA COMMUNICATION
PART A

1. What is mean by data communication?
2. What are the three criteria necessary for an effective and efficient network?
3. What are the three fundamental characteristics determine the effectiveness of the data communication system?
4. What are the advantages of distributed processing?
5. Why are protocols needed?
6. Why are standards needed?
7. For n devices in a network, what is the number of cable links required for a mesh and ring topology?
8. What is the difference between a passive and an active hub?
9. Distinguish between peer-to-peer relationship and a primary-secondary relationship.
10. Assume 6 devices are arranged in a mesh topology. How many cables are needed? How many ports are needed for each device?
11. What are header and trailers and how do they get added and removed?
12. The transport layer creates a communication between the source and destination. What are the three events involved in a connection?
13. What is the DC component?
14. How does NRZ-L differ from NRZ-I?
15. Using HDB3, encode the bit stream 10000000000100. Assume the number of 1s so far is odd and the first 1 is positive.
16. What are the functions of a DTE? What are the functions of a DCE?
17. What does the electrical specification of EIA-232 describe?
18. How are the guided media differing from unguided transmission media?
19. What are the criteria used to evaluate transmission medium?
20. What is cross talk and what is needed to reduce it?

PART B

1. Explain ISO/ OSI reference model with neat diagram (16)
2. What is meant by topology? and explain the topologies of the network. (16)
3. Explain the categories of networks. (16)
4. Explain coaxial cable & fiber optics. (16)
5. Explain line coding (digital to digital conversion). (16)
6. Discuss in detail with the RS232 interfacing sequences (16)

UNIT – II -DATA LINK LAYER
PART A

1. What are the responsibilities of data link layer?
2. Mention the types of errors.
3. What is redundancy?
4. List out the available detection methods.
5. Write short notes on VRC, LRC, and CRC
6. Write short notes on CRC generator & checker.
7. Define checksum.
8. Write short notes on error correction.
9. Mention the types of error correcting methods.
10. What is the purpose of hamming code?
11. Mention the categories of flow control.
12. What is the function of stop and wait flow control?
13. Mention the advantage and disadvantage of stop and wait flow control.
14. Define ARQ.
15. Mention the function of go-back N-ARQ.
16. What is selective reject ARQ?
17. Define HDLC.
18. List the types of stations is HDLC.
19. What are the different communication modes in HDLC?
20. Mention the types of frames in HDLC.
21. What is meant by bit stuffing?
22. What is meant by LAN and Mention the various architecture in a LAN?
23. Define a standard 802.3
24. Write short notes on FDDI.
25. What is piggy backing?

PART B

1. Explain error detection and error correction techniques. (16)
2. Explain error control mechanism. (16)
3. Explain the flow control mechanism (16)
4. Explain the timers and time registers in FDDI. (16)
5. Explain about Ethernet. (16)
6. Explain the frame format for token ring and token bus. (16)
7. Explain about HDLC. (16)

UNIT – III -NETWORK LAYER
PART A

1. What are the network support layers and the user support layers?
2. What are the functions of LLC?
3. What are the functions of MAC?
4. What is protocol data unit?
5. What are headers and trailers and how do they get added and removed?
6. What are the responsibilities of network layer?
7. What is a virtual circuit?
8. What are data grams?
9. What are the two types of implementation formats in virtual circuits?
10. What is meant by switched & permanent virtual circuit?
11. Define Routers.
12. What is meant by hop count?
13. How can the routing be classified?
14. What is time-to-live or packet lifetime?
15. Write the keys for understanding the distance vector & link state routing.
16. How the packet cost referred in distance vector and link state routing?
17. How the routers get the information about neighbor?
18. What are the four internetworking devices?
19. Define IP address.
20. What is Token Bus?
21. What is token passing?
22. Define Masking?
23. What are the rules of boundary & non boundary-level masking?
24. Define Gateway.
25. What is LSP?

PART B

1. Explain the two approaches of packet switching techniques. (16)
2. Explain IP addressing method. (16)
3. Define routing & explain distance vector routing and link state routing. (16)
4. Define bridge and explain the type of bridges. (16)
5. Explain sub netting (16)
6. Write short notes about repeaters, routers and gateways. (16)

UNIT- IV -TRANSPORT LAYER

PART A

1. What is function of transport layer?
2. What are the duties of the transport layer?
3. What is the difference between network layer delivery and the transport layer delivery?
4. What are the four aspects related to the reliable delivery of data?
5. What is meant by segment?
6. What are the types of multiplexing?
7. What are the two possible transport services?
8. The transport layer creates the connection between source and destination. What are the three events involved in the connection?
9. What are the techniques used in multiplexing?
10. What is meant by congestion?
11. Why the congestion occur in network?
12. How will the congestion be avoided?
13. What is the function of BECN BIT?
14. What is the function of FECN?
15. What is meant by quality of service?
16. What are the two categories of QOS attributes?
17. What are the networks & user related attributes?
18. What is frame & framing bits?
19. What is interleaving?
20. What is the difference between service point address, logical address and physical address?

PART B

1. Explain the duties of transport layer. (16)
2. Explain socket in detail. (16)
3. Explain UDP & TCP. (16)
4. Explain about congestion control. (16)
5. Explain leaky bucket and token bucket algorithm (16)

UNIT – V-APPLICATION LAYER

PART A

1. What is the purpose of Domain Name System?
2. Discuss the three main division of the domain name space.
3. Discuss the TCP connections needed in FTP.
4. Discuss the basic model of FTP.
5. What is the function of SMTP?
6. What is the difference between a user agent (UA) and a mail transfer agent?
7. How does MIME enhance SMTP?
8. Why is an application such as POP needed for electronic messaging?
9. Give the format of HTTP request message.
10. Give the format of HTTP response message.
11. Write down the three types of WWW documents.
12. What is the purpose of HTML?
13. Define CGI.
14. Name four factors needed for a secure network.
15. How is a secret key different from public key?
16. What is a digital signature?
17. What are the advantages & disadvantages of public key encryption?
18. Define permutation.
19. Define substitution & transposition encryption.
20. What is meant by cryptography?

PART B

1. Explain the functions of SMTP. (16)
2. Write short notes on FTP. (16)
3. Explain about HTTP. (16)
4. Explain the WWW in detail. (16)
5. Explain the type of Conventional encryption/decryption method. (16)