

B.Sc. (Hons.) Computer Science
Question Bank For Computer Networks
Unique Paper Code: 32341303

Part A

1. Discuss the use of computer networks.
2. Describe the features of LAN.
3. What is meant by piggybacking? What are its advantages and disadvantages?
4. How are errors caused in transmission lines?
5. Explain the Binary and Manchester encoding techniques with an example.
6. What is meant by congestion? List the ways of avoiding congestion.
7. Discuss the issues in network security.
8. Explain multiplexing technique.
9. Discuss the problems associated with Backward Learning.
10. What is transport address? Who will assign it?
11. Why is layered architecture of network preferred?
12. What is the principal difference between circuit switching and packet switching?
13. Explain how errors are detected using CRC.
14. What is meant by Pipelining? Discuss the merits and demerits of using this technique.
15. Discuss about any two methods of framing.
16. Compare virtual circuits and datagrams.
17. List the features of internetworking.
18. What is modem and codec?
19. What is flooding? What are its disadvantages?
20. What are the primary services offered by a computer network?
21. Mention the advantages of fiber optics.
22. What is meant by narrow band ISDN?
23. What is the significance of flow control?
24. List the drawbacks of simplex protocol.
25. Explain the use of bridges.
26. What is meant by inter networking?
27. List any four services of transport layer.
28. Mention the need for domain name system.
29. What are the components of multimedia?
30. What are the goals for setting up networks?
31. List the components of data communications.
32. Mention the advantages of co-axial cables.
33. What are satellite networks?
34. Briefly list the problems with single channel.
35. What is the need for routing algorithm?
36. List the features of token bus protocol.
37. Compare TCP and IP services.
38. Write a note on e-mail.
39. What are the different types of connections available?
40. What metrics are used to assess the performance of a network?
41. What is topology?

42. For n devices in a network, what is the number of cable links required for a mesh and ring topology?
43. Assume 6 devices are arranged in a mesh topology. How many cables are needed? How many ports are needed for each device?
44. Mention the different physical media?
45. What is the need for layering?
46. What is a protocol?
47. How does NRZ-L differ from NRZ-I?
48. What are the main features of Internet Architecture?
49. What are the responsibilities of data link layer?
50. What is framing?
51. What are the ways to address the framing problem?
52. If data is 011011111111100 what is the transmitted data and if received data is 01111110000111011111011111011001111110 what is the actual data in HDLC framing?
53. What are the issues in data link layer?
54. Define Bandwidth and Latency.
55. Define Error detection and correction.
56. What is redundancy?
57. List out the available detection methods.
58. Write short notes on CRC.
59. Define flow control?
60. Define ARQ.
61. Mention the categories of flow control?
62. Define HDLC.
63. What is piggy backing?

Part B

1. With a neat diagram, explain OSI reference model.
2. Describe the relative advantages and disadvantages of
 - a. Terrestrial links
 - b. Satellite links and
 - c. Optical fiber transmission.
3. Describe the error detecting and correcting techniques employed in data communication.
4. Discuss about collision free protocols.
5. Discuss the function and structure of e-mail protocol.
6. Write short notes on
 - a. Packet Switching
 - b. Message Switching
 - c. Circuit Switching
7. Explain the transport layer connection management.
8. Explain the bus type topology and ring type topology networks. Compare their performance.
9. What are the objectives of computer communication networks? What are the network components? Explain.
10. Explain the function of TCP/IP protocol.
11. Explain ISDN architecture and its services.
12. Describe the sliding window protocol for data link layer.
13. Describe the congestion control algorithms.

14. Explain IEEE's logical link control protocol used for LAN.
15. Explain the traditional cryptography used for network security and privacy.
16. Describe the structure and functions of E-mail protocol.
17. Explain wireless communications and their suitability to computer networks.
18. Explain the design issues of datalink layers.
19. Discuss the method of performing protocol specification and verification.
20. Describe the structure of network layer in the internet.
21. Discuss the services offered by the application layer.
22. Describe the ATM AAL layer protocols.
23. Write short notes on the following
 - a. World wide web
 - b. High speed LANs.
24. Explain the applications of computer networks.
25. Discuss the methods used for controlling errors in datalink layer.
26. Explain the various media used for data transmission in computer networks.
27. Explain any two protocols used by the datalink layer.
28. Explain the multi path routing algorithm.
29. Discuss the features of ATM networks.
30. Explain the design issues of transport layer.
31. Write short notes on
 - a. Channel allocation problems
 - b. Simple network management protocol.
32. Explain network architecture in detail
33. Explain different error detection and correction mechanisms with examples
34. Explain different flow control mechanisms used in brief.
35. What is framing? Explain different types of framing protocols with their format.
36. Explain how network software is implemented in networks.

Part C

1. What are the functions of MAC?
2. What is CSMA?. List the protocols used with CSMA
3. Define the term carrier sense in CSMA/CD?
4. What is the access method used by wireless LAN?
5. Define Ethernet
6. What is fast Ethernet and gigabit Ethernet?
7. What is the use of transceiver?
8. What is a hidden node and exposed node?
9. What is a Bluetooth?
10. What are the four prominent wireless technologies?
11. What are the four steps involves in scanning?
12. What is exponential back off?
13. What is the use of switches?
14. Differentiate circuit switching and packet switching
15. Compare datagram approach and virtual circuit approach.

16. What is a role of VCI?
17. What is a bridge? What are the functions of bridges?
18. What is a loop problem in bridges?
19. How does a given bridge learn whether it should forward a multicast frame over a given port?
20. What are the limitations of bridges?
21. In what way bridges differs from switches?
22. What are the advantages of datagram delivery model?
23. Define IP.
24. Find the class of the following addresses
227.13.14.88
227.13.14.88
25. Define subnetting
26. What is the network address in a class A subnet with the IP address of one of the hosts as 25.34.12.56 and mask 255.255.0.0?
27. Define CIDR
28. What is ARP?
29. What is DHCP?
30. What is ICMP?
31. Explain the following
 - ICMP
 - DHCP
32. Explain the functioning of wireless LAN in detail
33. Explain bridges and switches in brief.
34. Explain CSMA and protocols with Collision detection and Avoidance
35. A company is granted the site address 181.56.0.0 (class B). The company needs 1000 subnets. Design the subnets.

