1. Explain different types of transmission media used for networking?
2. Describe OSI model with functions of each layer.
3. Explain the following protocols with proper diagram:
   (i) Stop and Wait

   (ii) Go Back N

   (iii) Selective Repeat

4. Differentiate between the following :
   (i) Switch and Hub
   (ii) BRI and PRI services of ISDN
5. What is Multiplexing ? Explain different types of multiplexing with suitable examples.
6. Explain different types of Network Topologies with their advantages and disadvantages..
7. What is ISDN? Give advantages and disadvantages of ISDN.
8. Explain TCP header format?
9. Explain different types of switching technique with suitable examples for each.
10. Explain the following terms.
    (i) Routers
    (ii) Full Duplex transmission
    (iii) ATM
    (iv) Hub

Prakash Koirala

1. List all the seven layers of OSI model, its functionalities and standard protocols for each layer.
2. With respect to WAN distinguish between virtual circuit service and datagram service.
3. Differentiate between the following:
   (a) Hubs and Switches.
   (b) Transparent and spanning tree bridges.
4. What is Baseband and Broadband Communication? Explain.
5. Describe few application areas of ISDN.
6. Explain the following terms:
   (a) Flow Control.
   (b) MAC Layer.
   (c) Remote Procedure Call.
   (d) Multiplexing techniques.
7. Describe the factors responsible for having congestion in the network.
8. What is FDDI? Explain the working and list the advantages.
9. What is Telnet? Where it is used?
10. Supposing that transmission Channels become virtually error free. Will the data link layer still be needed?

2. Explain TCP/IP Reference model.
3. "Sloted ALOHA improves the performance of system over pure ALOHA". Justify.
4. Differentiate between Reliable & Unreliable connection with their application.
5. What is DNS? How it works?
6. What is cryptography? Explain the principles of cryptography.
7. What is TCP? Describe TCP segment header.
8. Write short note on (Any Two):
   a) Fragmentation b) Channelization c) VPN

Group C

Attempt any TWO questions:

9. Classify and calculate the total number of Networks and Hosts per network in IPV4.
10. Explain the IPV4 Header format in detail.
11. What is switching? Describe the types of switching with their advantages and disadvantages.

1) Mention four network topologies.
2) What is telnet ? How it differs from FTP ?
3) What is meant by protocol and internet protocol suite ?
4) Define encoding and decoding.
5) What is piggybacking ? What is its purpose ?
6) What is the difference between ethernet and fast ethernet ?
7) Define bit rate and baud rate.
8) What do you mean by Nyquist signalling rate ? Explain.
9) What is CSMA and CSMA/CD ?
10) What do you mean by IEEE 802.11 standards ?
11) What do you mean by flooding ? Explain.
12) Define datagram and packet.

1. Compare and contrast between OSI model and TCP/IP model.

2. What are the devices used at datalink layer? Describe the functions of network layer.

3. Differentiate between broadband and baseband services. Write the protocols used at data link layer and network layer.

4. Explain the different types of transmission media with examples.

5. Which layer is responsible for congestion control and routing? How congestion can be controlled? Explain.

6. What are the functions of transport layer? Describe the protocols used at transport layer.

7. What is network security? Explain the methods used to make the network secure.

8. What is ISDN ? Describe ISDN BRI Services? Also discuss the advantages of using ISDN.

9. Differentiate between virtual circuit and datagrams. Explain the terms Bandwidth, Channel capacity, Multiplexing, Quality of Service (QoS), Full-Duplex Transmission

10. Describe all the fields of TCP header with diagram.

26) Explain OSI reference model in detail.

27) Explain any two routing algorithms.

13) Explain circuit switching.

14) How many layers are there in TCP/IP model ? Mention the function of each layer.

15) Explain twisted pair cable as transmission medium.

16) Describe FDDI.

17) Explain 2-d parity check for error detection.

18) Explain HDLC frame structure.

19) Explain the differences between connection and connectionless services.

20) Explain the role of the following network devices :

i) Hub

ii) Switch

iii) Bridge

iv) Router

v) Repeater.

Er. Prakash Koirala