



# KINGS

COLLEGE OF ENGINEERING

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

## QUESTION BANK

SUB.CODE : CS1302

SUB.NAME : COMPUTER NETWORKS

YEAR : III

SEMESTER : VI

### UNIT-I

#### DATA COMMUNICATIONS

##### **PART-A ( 2 Marks)**

1. What are the five important components of data communication?
2. List two advantages of layering principle in computer networks.
3. With the example explain half duplex communication.
4. Mention any two functions of session layer.
5. Name four topologies of computer networks.
6. Suggest two points to improve the performance of network.
7. With the example explain half duplex communication.
8. Define protocol.
9. What is the advantage and disadvantage of RS-232.
10. What is the Null modem?
11. Define Topology.
12. Define standards.
13. What are the design factors for transmission media?
14. Difference between Guided media and un guided media.
15. Define line coding.
16. What are most popular modems?

17. Define network.
18. What are the criteria for networks for networks?
19. Define point to point and Multi point.
20. What is bit pattern?

**PART-B**

1. Explain the OSI-ISO model I of computer with neat diagram. **(16)**
2. Distinguish between Point to Point links and multi-point links with relevant diagram. **(16)**
3. (i) compare connection oriented and connection less service. **(8)**  
 (ii)What are the major component of an optical communication system discuss. **(8)**
4. Write shot notes on
  - a. Network Hierarchy **(4)**
  - b. Ethernet **(4)**
  - c. Token ring **(4)**
  - d. Ring topology **(4)**
5. Perform a comparative study between the ISO-OSI model and TCP/IP reference model. **(16)**

**UNIT-II**

**DATA LINK LAYER**

**PART-A ( 2Marks)**

1. Define block coding and give its purpose?
2. What is byte stuffing?
3. Write the importance of CRC in the network.
4. Sketch the Manchester encoding for the bit steam 0001110101.
5. Name the protocols used for CSMA

6. Wireless network and mobile networks are not identical explain
7. What is importance of hamming distance? What is Manchester Encoding?
8. What is mean by count to infinity problem?
9. What is Manchester Encoding?
10. What is the importance of variable sized sliding window in TCP?
11. Explain Aloha protocol.
12. Give the significance of termination.
13. What is IEEE 802.4 Standard?
14. Define Syndrome?
15. What are the various ARQ Retransmission strategies?
16. What is media sharing? State types of media sharing
17. State different IEEE 802 protocol.
18. Define throughput.
19. Define collision?
20. What is cyclic Redundancy check ?

### **PART-B**

1. Write short notes on.
  - a. GO Back NARQ **(8)**
  - b. Selective Repeat ARQ **(8)**
2. (i) Explain Hamming code technique to correct single bit error with an example. **(8)**  
(ii) Explain numbering of frames in GO Back NARQ, Selective Repeat ARQ protocols. **(8)**
3. (i) Explain MAC Ethernet protocol. **(8)**  
(ii) Explain MAC sub layer protocol and frame structure of 802.16. **(8)**
4. Explain the following Inter connection devices also discuss their uses
  - a. Repeater **(4)**
  - b. Bridge **(4)**

- c. Switch (4)
- d. Gateway (4)
5. (i) Consider a 32-bit Block of data (8)  
 11100111 11011101 00111001 10101001 that has been to be transmitted  
 If longitudinal Redundancy check is used what is the transmitted bit stream?
- (ii) In the Hamming code for a data unit of 'm' bits how do you know compute the number of redundant bits "r" needed? (8)
6. (i) Explain any one of the protocols used for flow control in noisy channels. (8)
- (ii) Write short note on
- a. sliding windows (4)
- b. X-MODEM (4)

### UNIT-III

#### NETWORK LAYER

##### PART-A (2 Marks)

1. What is subnetting?
2. What is the use of IP address?
3. State the difference between classless and classful addressing.
4. What is the difference between direct and indirect delivery.
5. What is the purpose of RIP.
6. what is the use of BGP.
7. What is the use of routing table.
8. Define Datagram.
9. Define Internet works?
10. What are the different type switching.
11. What is use the of Router?
12. What is the use of network layer?
13. What is MTU?
14. Define Fragmentation offset

15. Write the difference between bridge routers.
16. Find the error if any the following IP address.
  - a. 111.56.045.78
  - b. 75.45.301.14
17. Where the routing table is maintained also state the purpose of maintaining a routing table.
18. What is datagram socket?
19. Write any four routing algorithm.
20. What is an IP address?

### PART-B

1. Find the class of each IP address given suitable explanation. **(16)**
  - a. 227.12.14.87
  - b. 193.14.56.22
  - c. 14.23.120.8
  - d. 252.5.15.111
  - e. 134.11.78.56
  - f. 000 000 00 1111 0000 11111111 00110011
  - g. 10000000 1111 0000 11111111 00110011
2. Discuss how DES Algorithm works. **(16)**
3. State the major difference between Vector Routing and link state routing. **(16)**
4. Discuss how these routing and link state routing techniques work. **(16)**
5. What is the subnet work address if the destination address is 200.45.34.56 and the subnet mask is 255.255.240.0. **(16)**
6. What are the limitations of distance vector routing. How are they addressed in link state routing? **(16)**
7. Explain routing of mobile hosting. **(16)**

**UNIT-IV**  
**TRANSPORT LAYER**

**PART-A ( 2 Marks)**

1. What is the maximum case of UDP datagram?
2. What is the use of sequence numbers?
3. What is the source port numbers?
4. What is client process?
5. Name the policies that can prevent congestion?
6. How are congestions control and quality of service handled?
7. What is the definition of burst data?
8. What is traffic shaping? Name two methods of shape traffic?
9. What determine the sender Window size in TCP
10. How is Resource Reservation Protocol related to integrated services
11. What is Traffic descriptor?
12. What is Access rate ?
13. What is the methods to improve Qos?
14. What is necessity of flow control
15. What is multicast? What is the difference between unicast and multicast?
16. what are the two multiplexing strategies used in transport layer?
17. Why transport layer extends host to delivery to process
18. State why telnet uses network virtual terminal?
19. What is the service provided by TCP?
20. Difference between UDP and TCP.

**PART-B**

1. List and discuss the states used in TCP connection management finite state machine.
  - i. Discuss how multiplexing and demultiplexing is done in the transport layer.

**(8)**

- ii. Explain in detail the mechanism in transport layer for controlling congestion. **(8)**
- 2. i) Explain choke packets methods of congestion control. **(8)**  
ii) Explain classless inter domain running(CINR). **(8)**
- 3. i) Explain various problem and corresponding solution in establishing a connection at transport layer. **(8)**  
ii) Explain the connection release process applied at transport layer. **(4)**  
iii) Explain window management in TCP. **(4)**
- 4. i) Discuss about quality of services. **(8)**  
ii) Write short notes on integrated services. **(8)**

## **UNIT-V**

### **TRANSPORT LAYER**

#### **PART-A ( 2 Marks)**

1. Define authentication and name any two authentication protocols.
2. List any two types of DNS messages.
3. What is FDDI?
4. State why telnet uses network virtual terminal ?
5. How does the user gets E-mail from the message transfer agent?
6. What is the importance of cookies?
7. State the goals behind ISDN?
8. What is telnet used for ? Discuss.
9. Define security in networking.
10. State Why telnet uses network virtual terminal?
11. What are the elements of WWW?
12. What is the function provided by FTP?
13. Define SMTP?
14. What is the use of DNS?
15. Give example for hierarchy in DNS?

16. Compare plain text and cipher text?
17. what is symmetry key algorithm?
18. what are all the services provided my E-mail?
19. Define HTML?
20. Define Fire walls?

**PART-B**

- 1.i) Explain in detail the title transfer protocol. **(8)**
  - ii) Describe the architecture of ISDN. **(8)**
2. i) Explain in detail a protocol for electronic mail. **(8)**
  - ii) Explain in detail any one ISDN protocol. **(8)**
3. i) what is HTTP protocol used for? **(6)**
  - ii) What is the default port number of HTTP protocol? **(5)**
  - iii) Discuss the features of HTTP and also discuss how HTTP works. **(5)**
4. Explain the importance of firewalls. **(16)**
5. Explain in detail the following
  - i) Fault management. **(8)**
  - ii) security management. **(8)**

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