



# KINGS

COLLEGE OF ENGINEERING  
Punalkulam

**DEPARTMENT OF INFORMATION TECHNOLOGY**



## **QUESTION BANK**

**Subject Code: CS1302**

**Year/ Sem: III / V**

**Subject Name: Computer Networks**

### **UNIT-I**

#### **PART – A (2 MARKS)**

1. What is multicast? What is the difference between unicast and multicast?
2. What are the major advantages of shielded twisted pair over unshielded twisted pair?
3. Give two services offered by the session layer.
4. Define protocol.
5. Define line coding.
6. What are the types of connections available in networks that control the deviation of data transfer?
7. What is a modem?
8. Name any four topologies of computer networks
9. What type of interface is provided by RS232C?
10. Define LAN.

#### **PART-B (16 MARKS)**

1. Explain the ISO-OSI model of computer network with a neat diagram.
2. Discuss the major functions performed by the Presentation layer and Application layer of the ISO OSI model.
3. Explain Transport Layer and Physical Layer.
4. What are the major components of an optical communication system? Discuss.
5. Distinguish between point to point links and multi point links. Give relevant diagrams.
6. Explain Data Link Layer and Network Layer.
7. Compare Connection oriented and connectionless service.

**UNIT- II**

**PART – A (2 MARKS)**

1. What is the necessity of flow control?
2. What is FDDI?
3. Write the difference between a bridge and a raster
4. Find the error if any in the following IP addresses:  
a) 111.56.045.78      b) 75.45.301.14
5. What is the error detecting capability of parity check?
6. What is the size of the Ethernet address?
7. What is IEEE 802.4 standard?
8. Define: i) LRC ii) CRC
9. What is meant by congestion control?
10. What is an intranet?

**PART-B (16 MARKS)**

1. a) What is the need for data encoding and explain the various data encoding schemes and compare their features. (8)
- b) Explain how hamming code can be used to correct burst errors. (8)
2. Explain the operation of the bit-oriented protocol HDLC with the required frames
3. Explain the various error detection and correction Mechanisms used in computer network.
4. Write short notes on:  
    a) Go back NARQ (8)  
    b) Selective repeat ARQ (8)
5. a) Discuss the major functions performed by the Presentation layer and Application layer of the ISO - OSI model. (8)
- b) Compare Connection oriented and connectionless service. (4)
- c) What are the major components of an optical communication system? Discuss. (4)
6. a) A block of 32 bits has to be transmitted. Discuss how the thirty two bit block is transmitted to the receiver using Longitudinal Redundancy Check. (4)
- b) Consider a 32 bit block of data 11100111 11011101 00111001 10101001 that has to be transmitted. If Longitudinal Redundancy Check is used what is the transmitted bit stream? (4)
- c) In the Hamming code, for a data unit of 'm' bits how do you compute the number of redundant bits 'r' needed? (4)

- d) What kinds of errors can Vertical Redundancy check determine? What kinds of errors it cannot determine? (4)
7. Discuss stop and wait protocol
8. Discuss sliding window protocol using Go back n.
9. How does a Token Ring LAN operate? Discuss.

### UNIT-III

#### PART – A (2 MARKS)

1. Where is a routing table maintained? Also state the purpose of maintaining a routing table.
2. What is a datagram socket?
3. What are the services offered by Network layer?
4. What is the main disadvantage of distance vector routing?
5. What is the use of cell loss priority?
6. Define circuit switching
7. What is an IP address?
8. What is meant by internetworking?
9. Define routing.
10. Define packet switching.

#### PART-B (16 MARKS)

1. Explain distance vector routing in detail.
2. Explain packet switching in detail.
3. What are routers? Explain in detail.
4. What are the services provided by DNS server? Explain in detail.
5. Find the class of each IP address. Give suitable explanation. (8 x 2 = 16)
  - i) 227.12.14.87
  - ii) 193.14.56.22
  - iii) 14.23.120.8
  - iv) 252.5.15.111
  - v) 134.11.78.56
  - vi) 172.18.58.1
  - vii) 00000000 11110000 11111111 00110011
  - viii) 10000000 11110000 11111111 00110011
6. State the major difference between Distance Vector Routing and Link State Routing. Discuss how these routing techniques work.

7. What is the sub network address if the destination address is 200.45.34.56 and the subnet mask is 255.255.240.0?
8. List and diagrammatically illustrate and discuss the four general categories of attack.
9. With relevant example discuss about Substitution Ciphers.
10. Briefly discuss how DES algorithm works.

### **UNIT - IV**

#### **PART – A (2 MARKS)**

1. What is the frame format used in UDP?
2. State why Telnet uses Network Virtual terminal
3. Define Multiplexing & De multiplexing
4. What are the three events involved in the connection?
5. What are the functions of the Transport layer?
6. What is the service provided by TCP?
7. Define QoS.
8. Define Jitter.
9. What is the difference between service point address, logical address and physical address?
10. What is meant by segment?
11. Why the congestion occurs in network?
12. What are the two categories of QoS attributes?

#### **PART-B (16 MARKS)**

1. a) Perform a comparative study between the ISO OSI model and the TCP/IP reference model. (8)  
b) Distinguish between point to point links and multi point links. Give relevant diagrams. (8)
2. List and discuss the states used in the TCP connection management finite state machine.
3. Discuss the various timers used by TCP to perform its various operations.
4. Present a tutorial on User Datagram Protocol (UDP).
5. Discuss the strategies TCP uses to avoid congestion.
6. Explain UDP & TCP.
7. Explain leaky bucket and token bucket algorithm.
8. Explain the duties of transport layer.

**UNIT-V**

**PART – A (2 MARKS)**

1. List the two types of DNS messages.
2. What is the use of mail transfer agent?
3. Define SMTP.
4. What are the elements of WWW?
5. Explain: HTTP
6. Write any two methods by which security is provided internet.
7. What is the purpose of DNS server?
8. Define cryptography.
9. What is the function provided by FTP?
10. What is the difference between a user agent and a mail transfer agent?
11. Why is an application such as POP needed for electronic messaging?
12. What is the purpose of HTML?
13. What is a digital signature?

**PART-B (16 MARKS)**

1. Explain how security is provided in interact operations in detail.
2. What is HTTP protocol used for? What is the default port number of HTTP protocol?  
Discuss the features of HTTP and also discuss how HTTP works.
3. List and discuss the types of DNS records.
4. Explain WWW.
5. What are the duties of FTP protocol?
6. Explain the type of encryption/decryption method.
7. Explain about RSA algorithm