

**Government Engineering College, Dahod (018)**  
**Computer Engineering Department (07)**  
**Semester: 4<sup>th</sup>**  
**Tutorial List**

**Computer Networks (2140709)**

**CHAPTER 1: Introduction to Computer Network**

1. Explain the following terms : Jitter , Bandwidth and throughput. [GTU Dec 2010]
2. Which of the OSI layers handles each of the following : [GTU Dec 2010]
  - Determine which route through the subnet to use.
  - Dividing the transmitted bit stream into frames.
  - Encryption and compression of the information.
  - Flow control between source and destination node.
3. Classify various transmission media for computer networks, and compare UTP and fiber optic media. [GTU Dec 2010]
4. What are the various congestion prevention policies at datalink , network and transport layer of the OSI ? [GTU Dec 2010]
5. An organization is granted the block 211.17.180.0/24. The administrator wants to create 32 subnets. [GTU Dec 2010]
  - a) Find the subnet mask.
  - b) Find the number of addresses in each subnets.
  - c) Find the first and last addresses in subnet 1.
  - d) Find the first and last addresses in subnet 32
6. Write note on: [GTU Dec 2010]  
Bridge and Switches.

7. Discuss different types of guided and unguided media used to transmit data in network.  
.[GTU Jun 2011]
8. Answer the following questions. Explain design issues for layers.  
Explain: Distributed Queue dual bus. .[GTU Jun 2011]
9. What is OSI model ? Draw Diagram and Explain Physical, Data link and  
Network layer with its functions. [GTU Dec 2011]
10. Discuss different types of guided and unguided media used to transmit  
data in the network. [GTU Dec 2011]
11. Explain the terms : LAN, MAN, WAN, Internet[GTU Dec 2011]
12. What is the purpose of physical layer? Explain multimode fiber and single mode fiber.  
Explain the transmission of light through fiber.

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**CHAPTER 2: Application Layer**

1. How does DNS work? Explain. [GTU Dec 2010]
2. Explain DNS in detail with example.[GTU Jun 2011]
3. Explain the e-mail architecture and services. Write short note on POP3 and
4. MIME.[GTU Dec 2010]
5. Compare : TCP and UDP[GTU Dec 2011]
6. Compare : IPv4 and IPv6[GTU Dec 2011]
7. Explain WWW and HTTP[GTU Dec 2011]

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**CHAPTER 3: Transport Layer**

1. List the various duties of the transport layer and explain each in brief. Compare UDP and TCP [GTU Dec 2010]
2. Answer the following questions. .[GTU Jun 2011]
  - Explain various Quality of service parameters for transport layer.
  - Explain crash recovery of transport protocol.
3. Explain various Quality of service parameters for transport layer. Explain crash recovery of transport protocol.[GTU Jun 2011]
4. Compare : Ethernet and Fast Ethernet.[GTU Dec 2011]
5. Explain : MAC address and IP address.[GTU Dec 2011]

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**CHAPTER 4: Network Layer**

1. Compare datagram subnet and virtual-circuit subnets. [GTU Dec 2010]
2. What is the serious drawback of distance vector routing ? explain it with example. [GTU Dec 2010]
3. Explain and compare distance vector routing and link state routing algorithm. [GTU Dec 2010]
4. Draw IP header and explain the each field of the header. Also explain the concept of fragmentation in detail. [GTU Dec 2010]
5. Explain the following concepts : [GTU Dec 2010]  
Tunneling, Network address translation and DHCP.
6. Explain distance vector routing. What is count to infinity problem? .[GTU Jun 2011]
7. Explain Link State Routing algorithm in detail. .[GTU Jun 2011]
8. Design issues of Network Layer. [GTU Dec 2011]
9. Explain Multicasting, Broadcasting and Unicasting.
10. Answer the following questions. .[GTU Jun 2011]
  1. Differentiate: Datagram subnet v/s Virtual circuit subnet.
  2. Explain Jitter Control.

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**CHAPTER 5: Link Layer**

1. What is framing? Explain the various methods used for carrying out the framing in detail. [GTU Dec 2010]
2. Write the functions of Media Access Control sub layer. And Compare pure ALOHA and slotted ALOHA. [GTU Dec 2010]
3. A bit stream 110101011 is transmitted using standard CRC method . The generator polynomial is  $x^4+x+1$  .Show the actual bit string transmitted.  
Also Explain the error detecting and correcting code with example. [GTU Dec 2010]
4. Compare transparent bridge and source routing bridge. .[GTU Jun 2011]
5. Explain HDLC. [GTU Dec 2011]
6. Explain Sliding window protocol using GO back to N. [GTU Dec 2011]
7. Explain STOP and Wait Protocol. [GTU Dec 2011]
8. Differentiate : Router and Switch[GTU Dec 2011]
9. Design issues of Data link Layer. [GTU Dec 2011]
10. Explain Advantages and Usage of Network[GTU Dec 2011]
11. What is topology? Give different type of topology and its use[GTU Dec 2011]