

NGM COLLEGE
DEPARTMENT OF COMPUTERSCIENCE (SF)
COURSE TITLE: DATA COMMUNICATIONS AND COMPUTER NETWORK
COURSE CODE: 17UCS413
UNIT-1

K1 Level Multiple Choice Questions with Answers

1) What layer in the TCP/IP stack is equivalent to the Transport layer of the OSI model?

- A. Application
- B. Host-to-Host
- C. Internet
- D. Network Access

Answer: **B**

2) You want to implement a mechanism that automates the IP configuration, including IP address, subnet mask, default gateway, and DNS information. Which protocol will you use to accomplish this?

- A. SMTP
- B. SNMP
- C. DHCP
- D. ARP

Answer: **C**

3) Which of the following is private IP address?

- A. 12.0.0.1
- B. 168.172.19.39

C. 172.15.14.36

D. 192.168.24.43

Answer: **D**

4) MAC address is of

A. 24 bits

B. 36 bits

C. 42 bits

D. 48 bits

Answer: **D**

5) A point-to-point protocol over ethernet is a network protocol for

A. encapsulating PPP frames inside ethernet frames

B. encapsulating ethernet frames inside PPP frames

C. for security of ethernet frames

D. for security of PPP frames

Answer: **A**

6) High speed ethernet works on

A. coaxial cable

B. twisted pair cable

C. optical fiber

D. none of the mentioned

Answer: **C**

7)Address Resolution Protocol (ARP) is a

- A. 8 Bit Field
- B. 10 Bit Field
- C. 12 Bit Field
- D. 16 Bit Field

Answer: **D**

8) In Address Resolution Protocol (ARP), each LAN has been assigned a

- A. Trigger
- B. Integer
- C.Repeater
- D. Process header

Answer: **B**

9)In Address Resolution Protocol (ARP), a packet is encapsulated directly into a

- A. Data link Integer
- B.Network Frame
- C. Network Station
- D. Data link Frame

Answer: **D**

10) If an Address Resolution Protocol (ARP) request is broadcast, an ARP reply is

- A. Universal
- B. Unicast
- C. Multicast
- D. Generated locally

Answer: **B**

UNIT-2

11) Switching in Internet is done by using datagram approach to packet switching at the

- A. network layer
- B. application layer
- C. data link layer
- D. physical layer.

Answer: **A**

12) A switch in a datagram network uses a

- A. destination address
- B. sender address
- C. routing table
- D. header

Answer: **C**

13) A Virtual-Circuit Network (VCN) is normally implemented in the

- A. session layer

B. data link layer

C. network layer

D. physical layer

Answer: **B**

14) Asynchronous Transfer Mode (ATM) network is an example of

A. Packet switching network

B. Datagram Networks

C. Virtual circuit network

D. message switched network

Answer: **C**

15) IPV4 Address is

A. 8 bit

B. 16 bit

C. 32 bit

D. 64 bit

Answer: **C**

16) Internet Control Message Protocol (ICMP) has header size of

A. 12 Bytes

B. 10 Bytes

C. 08 Bytes

D. 06 Bytes

Answer: **C**

17) Internet Control Message Protocol (ICMP) is companion of

A. IP Transmission

B. IP Packet

C. IP Frame

D. IP protocol

Answer: **D**

18) IP is a connectionless

A. Source

B. Protocol

C. Station

D. Destination

Answer: **B**

19) Parameter that is normally achieved through a trailer added to end of frame is

A. Access Control

B. Flow Control

C. Error Control

D. Physical addressing.

Answer: C

20) Application layer provides basis for

A. Email services

B. Frame Division

C. File Making

D. None of the above

Answer: A

UNIT-3

21) In IPv4, value of Maximum Transfer Unit (MTU) depends on the

A. Physical network protocol

B. DataLink network protocol

C. UD protocol

D. Transport network protocol

Answer: A

22) In IPv4 layer, datagrams are the

A. Frames

B. Addresses

C. Protocol

D. Packets

Answer: **D**

23) The data link layer takes the packets from _____ and encapsulates them into frames for transmission.

A. network layer

B. physical layer

C. transport layer

D. application layer

Answer: **A**

24) CRC stands for

A. cyclic redundancy check

B. code repeat check

C. code redundancy check

D. cyclic repeat check

Answer: **A**

25) Which one of the following is the multiple access protocol for channel access control?

A. CSMA/CD

B. CSMA/CA

C. Both CSMA/CD & CSMA/CA

D. None of the mentioned

Answer: **C**

26) Which one of the following is a transport layer protocol used in networking?

- ☐ A. TCP
- ☐ B. UDP
- ☐ C. Both TCP and UDP
- ☐ D. None of the mentioned

Answer: **C**

27) Transport layer protocols deal with

- ☐ A. application to application communication
- ☐ B. process to process communication
- ☐ C. node to node communication
- ☐ D. none of the mentioned

Answer: **B**

28) Which one of the following is a transport layer protocol?

- ☐ A. stream control transmission protocol
- ☐ B. internet control message protocol
- ☐ C. neighbor discovery protocol
- ☐ D. dynamic host configuration protocol

Answer: **A**

29) When displaying a web page, the application layer uses the _____

- ☐ A. HTTP protocol
- ☐ B. FTP protocol
- ☐ C. SMTP protocol

D. TCP protocol

Answer: **A**

30) Application layer protocol defines _____

A. types of messages exchanged

B. message format, syntax and semantics

C. rules for when and how processes send and respond to messages

D. all of the mentioned

Answer: **D**

UNIT-4

1. Bluetooth is an example of

A .Personal area network

b.LAN

c .Virtual private network

d.none of the above

2. Each device in DQDB system is connected _____

a) to just one bus

b) to two buses

c) in a single ring structure.

d.none of the above

3. Each DQDB bus is _____

a) Unidirectional

b) Bi directional

c) Connect to just the end stations.

d.none of the above

4. The DQDB _____ store requests for slots

a) Queues

b) Switches

c) Packets.

d.Reservations

5. A DQDB device accesses a bus link through _____

a) Token passing

b) Distributed Queues

c) Contention

d.CSMA/CD

6. Most common type of a computer network is

A. PAN

B. WAN

C. LAN

D. MAN

7. . Expand WAN?

a) World area network

b) Wide area network

c) Web area network

d) None of the mentioned

8. ISP stands for

- A. Internet Service Provider**
- B. Internet System Provider
- C. International Service Provider
- D. International System Program

9. Network that is usually owned privately and links devices in single office is called

- A. MAN
- B. LAN**
- C. WAN
- D. Internetwork

10. Traffic on a DQDB bus _____

- A. Moves in one direction**
- B. Moves in two direction
- C. Alternates between buses.
- D. None of the above

UNIT -5

1. ISDN stands for _____

- a) **Integrated Services Digital Network**
- b) Integrated Services Discrete Network
- c) Integrated Services Digital Node
- d) Integrated Services Discrete Node

2. Information bearing channels in ISDN are called _____

- a) D channels
- b) Data channels
- c) B channels**
- d) Voice channels

3. ISDN is a

- a) Packet switched network
- b) Circuit switched telephone network

c) **Packet switched & Circuit switched telephone network**

d) None of the mentioned

4. ISDN integrates speech and data on

a) Different lines

b) **Same lines**

c) Different & Same lines

d) None of the mentioned

5. Circuit switched connection is provided for

a) Voice

b) Data

c) **Voice & Data**

d) None of the mentioned

6. In ISDN, the channel having the lowest data rate is

a) B

b) C

c) **D**

d) H

7. The services provided by ISDN

a) Bearer service

b) Teleservice

c) Secondary service

d) **All of the mentioned**

8. In a telephone channel, voice signals are band limited to _____ KHZ

a) 1

b) 5

c) 3

d) **8**

9. Packet switched connection is provided for

a) Voice

b) **Data**

- c) Voice & Data
- d) None of the mentioned

10. An ISDN address can define upto _____ countries

- a) 10
- b) 100**
- c) 1000
- d) None of the mentioned

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K2 Level Questions

UNIT-1

1) Summarize a Network?

Ans: A network is a set of devices connected to each other using a physical transmission medium

2) Explain Internet, Intranet, and Extranet?

Ans: The terminologies Internet, Intranet, and Extranet are used to define how the applications in the network can be accessed. They use similar TCP/IP technology but differ in terms of access levels for each user inside the network and outside the network.

Internet: Applications are accessed by anyone from any location using the web.

Intranet: It allows limited access to the users in the same organization.

Extranet: External users are allowed or provided with access to use the network application of the organization.

3) Explain different types of a network?

Ans: There are 4 major types of network.

Let's take a look at each of them in detail.

- Personal Area Network (PAN): It is a smallest and basic network type that is often used at home. It is a connection between the computer and another device such as phone, printer, modem tablets etc
- Local Area Network (LAN): LAN is used in small offices and internet cafe to connect a small group of computers to each other. Usually, they are used to transfer a file or for playing the game in a network.
- Metropolitan Area Network (MAN): It is a powerful network type than LAN. The area covered by MAN is a small town, city etc. A huge server is used to cover such a large span of area for connection.
- Wide Area Network (WAN): It is more complex than LAN and covers a large span of area typically a large physical distance. The Internet is the largest WAN which is spread across the world. WAN is not owned by any single organization but it has distributed ownership.

There are some other types of network as well:

- Storage Area Network (SAN)
- System Area Network (SAN)
- Enterprise Private Network (EPN)
- Passive Optical Local Area Network (POLAN)

4) Compare Communication and Transmission?

Ans) Through Transmission the data gets transferred from source to destination (Only one way). It is treated as the physical movement of data.

Communication means the process of sending and receiving data between two media (data is transferred between source and destination in both ways).

5) Classify internet connections?

Ans) *There are three types of internet connections. They are listed below*

1) Broadband Connection – This type of connection gives continuous high-speed internet. In this type, if we log off from the internet for any reason then there is no need to log in again.

Eg: Modems of cables, Fibres, wireless connection, satellite connection etc.

2) Wi-Fi – It is a wireless internet connection between the devices. It uses radio waves to connect to the devices or gadgets.

3) WiMAX – It is the most advanced type of internet connection which is more featured than Wi-Fi. It is nothing but the high-speed and advanced type of broadband connection

6) Explain the characteristics of networking?

Ans) *The main characteristics of networking are mentioned below,*

- Topology: This deals with how the computers or nodes are arranged in the network. The computers are arranged physically or logically.
- Protocols: Deals with the process how the computers communicate with one another.
- Medium: This is nothing but the medium used by the computers for communication.

7) What is the difference between a Domain and a Workgroup?

Ans: In a Computer Network, different computers are organized in different methods and these methods are – Domains and Workgroups. Usually, computers which run on the home network belong to a Workgroup.

However, computers which are running on an office network or any workplace network belong to the Domain.

8) What are TCP and UDP?

Ans: Common factors in TCP and UDP:

- TCP and UDP are the most widely used protocols that are built on the top of IP protocol.
- Both protocols TCP and UDP are used to send bits of data over the internet, which is also known as 'packets'.
- When packets are transferred using either TCP or UDP, it is sent to an IP address. These packets are traversed through routers to the destination.

TCP	UDP
TCP stands for Transmission Control Protocol	UDP is stands for User Datagram Protocol or Universal Datagram Protocol
Once the connection is setup, data can be sent bi-directional i.e. TCP is a connection oriented protocol	UDP is connectionless, simple protocol. Using UDP, messages are sent as packets
The speed of TCP is slower than UDP	UDP is faster compared to TCP

TCP	UDP
TCP is used for the application where time is not critical part of data transmission	UDP is suitable for the applications which require fast transmission of data and time is crucial in this case.
TCP transmission occurs in a sequential manner	UDP transmission also occurs in a sequential manner but it does not maintain the same sequence when it reaches the destination
It is heavy weight connection	It is lightweight transport layer
TCP tracks the data sent to ensure no data loss during data transmission	UDP does not ensure whether receiver receives packets are not. If packets are misses then they are just lost

9) What is Network Topology?

Ans: Network Topology is a physical layout of the computer network and it defines how the computers, devices, cables etc are connected to each other.

10) What are Routers?

Ans: The router is a network device which connects two or more network segments. The router is used to transfer information from the source to destination.

Routers send the information in terms of data packets and when these data packets are forwarded from one router to another router then the router reads the network address in the packets and identifies the destination network.

UNIT-2

11) What is OSI reference model?

Ans: Open System Interconnection, the name itself suggest that it is a reference model which defines how applications can communicate with each other over a networking system. It also helps to understand the relationship between networks and defines the process of communication in a network.

12) What is a Node?

Ans: Two or more computers are connected directly by an optical fiber or any other cable. A node is a point where a connection established. It is a network component which is used to send, receive and forward the electronic information.

A device connected to a network is also termed as Node. Let's consider that in a network there are 2 computers, 2 printers, and a server are connected, then we can say that there are five nodes on the network.

13) What is the difference between Hub, Switch, and Router?

Ans:

Hub	Switch	Router
-----	--------	--------

Hub	Switch	Router
Hub is least expensive, least intelligent and least complicated of the three. It broadcast all data to every port which may cause serious security and reliability concern	Switches work similarly like Hubs but in a more efficient manner. It creates connections dynamically and provides information only to the requesting port	The router is smartest and most complicated out of these three. It comes in all shapes and sizes. Routers are similar like little computers dedicated for routing network traffic
In a Network, Hub is a common connection point for devices connected to the network. Hub contains multiple ports and is used to connect segments of LAN	Switch is a device in a network which forwards packets in a network	Routers are located at gateway and forwards data packets

14) Explain TCP/IP Model

Ans: The most widely used and available protocol is TCP/IP i.e. Transmission Control Protocol and Internet Protocol. TCP/IP specifies how data should be packaged, transmitted and routed in their end to end data communication

15) Compare TCP and UDP

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It is heavy weight connection	It is lightweight transport layer
TCP tracks the data sent to ensure no data loss during data transmission	UDP does not ensure whether receiver receives packets are not. If packets are misses then they are just lost

16) What is NIC?

Ans: NIC stands for Network Interface Card. It is also known as Network Adapter or Ethernet Card. It is in the form of add-in card and is installed in a computer so that the computer can be connected to a network.

Each NIC has a MAC address which helps in identifying the computer on a network.

17) what is a VPN?

Ans: VPN is the Virtual Private Network and is built on the Internet as a private wide area network. Internet-based VPNs are less expensive and can be connected from anywhere in the world.

VPNs are used to connect offices remotely and are less expensive when compared to WAN connections. VPNs are used for secure transactions and confidential data can be transferred between multiple offices. VPN keeps company information secure against any potential intrusion.

18) Describe the layers of OSI model?

Ans) OSI model stands for Open System Interconnection. It is a framework which guides the applications how they can communicate in a network.

OSI model has seven layers. They are listed below,

- Physical Layer (Deals with transmission and reception of unstructured data through a physical medium)
- Data Link Layer (Helps in transferring error-free data frames between nodes)
- Network Layer (Decides the physical path that should be taken by the data as per the network conditions)
- Transport Layer (Ensures that the messages are delivered in sequence and without any loss or duplication)
- Session Layer (Helps in establishing a session between processes of different stations)
- Presentation Layer (Formats the data as per the need and presents the same to Application layer)
- Application Layer (Serves as the mediator between Users and processes of applications).

19) How many types of modes are used in data transferring through networks?

Ans) *Data transferring modes in computer networks are of three types. They are listed below,*

1) Simplex: Data transferring which takes place only in one direction is called Simplex. In Simplex mode, the data gets transferred either from sender to receiver or from receiver to sender.

Eg: Radio signal, the print signal given from computer to printer etc.

2) Half Duplex: Data transferring can happen in both directions but not at the same time. Alternatively, the data is sent and received.

Eg: Browsing through the internet, a user sends the request to the server and later the server processes the request and sends back the web page.

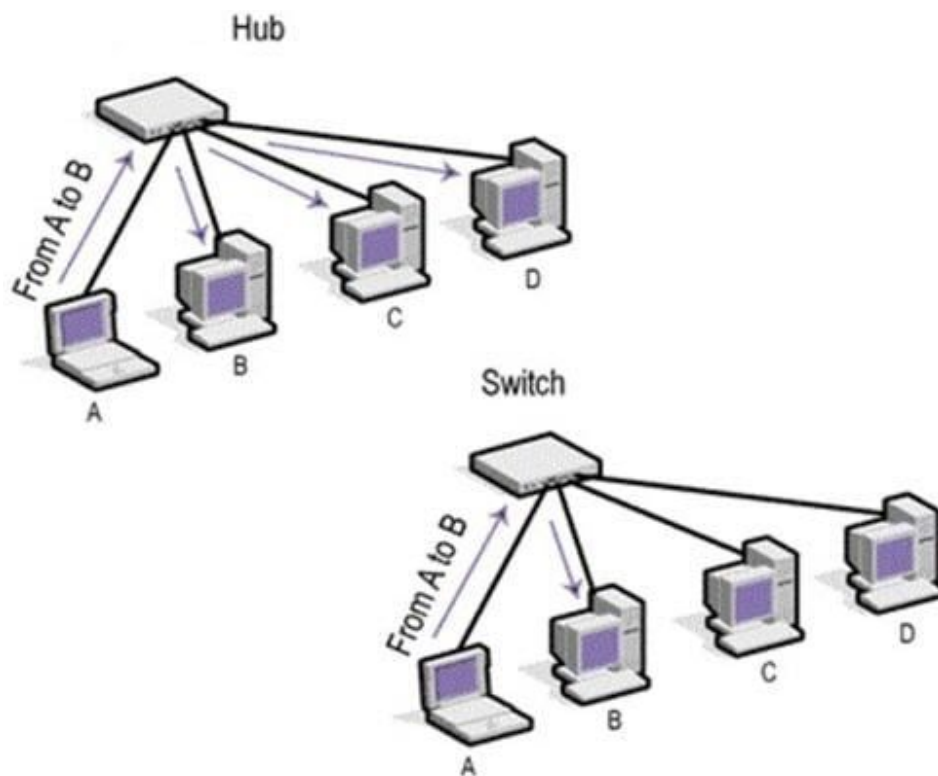
3) Full Duplex: Data transferring happens in both directions that too simultaneously.

Eg: Two lane road where traffic flows in both the directions, communication through telephone etc.

20)How a Switch is different from a Hub?

Ans) Below are the differences between a Switch and a Hub,

Below given snapshot clearly, explains the difference between a switch and a hub,



UNIT-3

21)Define Static IP and Dynamic IP?

Ans) When a device or computer is assigned a specified IP address then it is named as Static IP. It is assigned by the Internet Service Provider as a permanent address.

Dynamic IP is the temporary IP address assigned by the network to a computing device.

Dynamic IP is automatically assigned by the server to the network device.

22) What is the use of encryption and decryption?

Ans) Encryption is the process of converting the transmission data into another form that is not read by any other device other than the intended receiver.

Decryption is the process of converting back the encrypted data to its normal form. An algorithm called cipher is used in this conversion process.

23) How are networks classified based on their connections?

Ans) Networks are classified into two categories based on their connection types. They are mentioned below,

- Peer-to-peer networks (P2P): When two or more computers are connected together to share resources without the use of a central server is termed as a peer-to-peer network. Computers in this type of network act as both server and client. Generally used in small companies as they are not expensive.
- Server-based networks: In this type of network, a central server is located to store the data, applications etc of the clients. The server computer provides the security and network administration to the network.

24) What is an Encoder?

Ans) Encoder is a circuit that uses an algorithm to convert any data or compress audio data or video data for transmission purpose. An encoder converts the analog signal into the digital signal.

25) What is a Decoder?

Ans) Decoder is a circuit which converts the encoded data to its actual format. It converts the digital signal into analog signal.

26) Describe the key elements of protocols?

Ans) *Below three elements are the key elements of protocols*

- Syntax: It is the format of the data. That means in which order the data is displayed.
- Semantics: Describes the meaning of the bits in each section.
- Timing: At what time the data is to be sent and how fast it is to be sent.

27) Tcp/ip Has How Many Layers?

Answer :

5 layers: Network layer, Internet layer, Transport layer and Application layer.

28) What is a Link?

A link refers to the connectivity between two devices. It includes the type of cables and protocols used in order for one device to be able to communicate with the other.

29) What is the main job of the ARP?

The main task of ARP or Address Resolution Protocol is to map a known IP address to a MAC layer address.

30) What is DNS?

DNS is Domain Name System. The main function of this network service is to provide host names to TCP/IP address resolution.

UNIT-4

31)What is TCP/IP?

TCP/IP is short for Transmission Control Protocol / Internet Protocol. This is a set of protocol layers that is designed to make data exchange possible on different types of computer networks, also known as heterogeneous network.

32)What protocols fall under the Application layer of the TCP/IP stack?

The following are the protocols under TCP/IP Application layer: FTP, TFTP, Telnet and SMTP.

33)What is the difference between a straight-through and crossover cable?

A straight-through cable is used to connect computers to a switch, hub or router. A crossover cable is used to connect two similar devices together, such as a PC to PC or Hub to hub.

34)What is the difference between CSMA/CD and CSMA/CA?

CSMA/CD, or Collision Detect, retransmits data frames whenever a collision occurred. CSMA/CA, or Collision Avoidance, will first broadcast intent to send prior to data transmission.

35)What protocols fall under the TCP/IP Internet Layer?

There are 4 protocols that are being managed by this layer. These are ICMP, IGMP, IP and ARP.

36)what is the maximum segment length of a 100Base-FX network?

The maximum allowable length for a network segment using 100Base-FX is 412 meters. The maximum length for the entire network is 5 kilometers.

37) Define MAC Layer

The Media Access Control Layer is one of two sublayers that make up the Data LinkLayer of the OSI model. The MAC layer is responsible for moving data packets to and from one Network Interface Card (NIC) to another across a shared channel.

38) What is NIC?

Ans: NIC stands for Network Interface Card. It is also known as Network Adapter or Ethernet Card. It is in the form of add-in card and is installed in a computer so that the computer can be connected to a network.

Each NIC has a MAC address which helps in identifying the computer on a network.

39) Define IP Address?

Ans: Internet Protocol (IP Address) is a 32-bits to 128-bits identifier for a device on TCP/IP protocol. IP address of a device must be uniquely defined for communication. It has 2 principal functions which include host and location address. And it has two versions which are IPv4 (32-bits) and IPv6 (128-bits).

40) Define Topology.

Ans: It is an arrangement of elements in a specific order.

The various types of Topology include:

- Bus
- Star
- Mesh
- Ring
- Hybrid
- Tree

UNIT-5

41) What is meant ARP and RARP?

Ans: ARP is Address Resolution Protocol which is used to map an IP address to a physical machine.

RARP is Reverse Address Resolution Protocol which is used to map MAC address to the IP address.

42) What is half-duplex?

It is the mode of communication between two devices in which flow of data is bi-directional but not at the same time. ie each station can transmit and receive but not at the same time.

E.g walkie-talkies are half-duplex system.

43) What is full duplex?

It is the mode of communication between two devices in which flow of data is bi-directional and it occurs simultaneously. Here signals going in either direction share the capacity of the link.

E.g. telephone

44) What is multiplexing?

Multiplexing is the process of dividing a link, the physical medium, into logical channels for better efficiency. Here medium is not changed but it has several channels instead of one.

45) Define parity check.

In parity check, a parity bit is added to every data unit so that the total number of 1s is even (or odd for odd parity). Simple parity check can detect all single bit errors. It can detect burst errors only if the total number of errors in each data unit is odd. In two dimensional parity checks, a block of bits is divided into rows and a redundant row of bits is added to the whole block.

46) Define cyclic redundancy check (CRC).

CRC appends a sequence of redundant bits derived from binary division to the data unit. The divisor in the CRC generator is often represented as an algebraic polynomial.

47) What is hamming code?

The hamming code is an error correction method using redundant bits. The number of bits is a function of the length of the data bits. In hamming code for a data unit of m bits, we use the formula $2^r \geq m+r+1$ to determine the number of redundant bits needed. By rearranging the order of bit transmission of the data units, the hamming code can correct burst errors.

48) Define stop and wait ARQ.

In stop and wait ARQ, the sender sends a frame and waits for an acknowledgement from the receiver before sending the next frame.

49) What is Firewall?

It is an electronic downbridge which is used to enhance the security of a network. Its configuration has two components.

i) Two routers

ii) Application gateway

the packets traveling through the LAN are inspected here and packets meeting certain criteria are forwarded and others are dropped.

50) Compare Error Detection and Error Correction:

The correction of errors is more difficult than the detection. In error detection, checks only any error has occurred. In error correction, the exact number of bits that are corrupted and location in the message are known. The number of the errors and the size of the message are important factors.

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K3 Level Questions

UNIT -1

1. Categorize protocol in detail.
2. List different types of standards in detail.
3. Analyze different types of signal propagation in detail.
4. Compare half duplex communication with simplex communication.
5. Discuss parallel communication in detail
6. Compare half duplex communication with full duplex communication.
7. Discuss serial communication in detail
8. Compare single bit error and burst error.
9. Compare CRC and VRC
10. Compare stop and wait with Go back n

UNIT -2

1. Compare coaxial cable and twisted pair cable.
2. Compare microwave and satellite communication.
3. Classify different types of access methods.
4. Analyze unguided media in detail.
5. Analyze optical fiber in detail.
6. Compare step index and graded index fiber.
7. List the different types of topology
8. Compare circuit switching and packet switching.
9. Compare Star topology and mesh topology
10. Analyze message switching in detail.

UNIT -3

1. Analyze protocols in detail.
2. Explain Physical layer in detail.
3. Explain Data link layer in detail.
4. Explain Network layer in detail.
5. Explain Presentation layer in detail.
6. Explain Application layer in detail.
7. Explain Transport layer in detail.
8. Explain Session layer in detail
9. Explain MAC layer in detail.
10. Analyze the functions of MAC Layer.

UNIT -4

1. Analyze Ethernet properties in detail.
2. Explain CSMA/CD in detail.
3. Explain logical operators.
4. Explain Ethernet in detail.
5. Explain Metropolitan Area network in detail.
6. Analyze DQDB in detail.
7. Explain Switched Multimegabit Data Services in detail.
8. Explain Wide area network in detail with example
9. Explain WAN architecture in detail.
10. Compare WAN and MAN.

UNIT -5

1. Explain ISDN Architecture in detail.
2. Compare different ISDN Interfaces in detail.
3. Explain X.25 Protocol in detail.
4. Explain Working of X.25 protocol in detail.
5. Explain TCP/IP in detail.
6. Explain IP Addresses in detail.
7. Explain ARP in detail.
8. Explain RARP in detail
9. Compare ARP and RARP.
10. Explain Logical Addresses in detail.

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K4 Questions

UNIT I

1. Distinguish serial and parallel communication in detail.
2. Compare Protocols and standards in detail.
3. Analyze Signal propagation in detail.
4. Analyze the different error classification in detail.
5. Classify the different error detection techniques.

UNIT II

1. Categorize the different topology in network.
2. Analyze the circuit switching in detail.
3. Elaborate the packet switching in detail.
4. Analyze unguided media with neat diagram.
5. Compare satellite communication and microwave communication.

UNIT III

1. Analyze the protocols in computer communication.
2. Analyze Physical layer in detail.
3. Discuss the functions of Application layer.
4. Discuss the functions of presentation layer.
5. Explain the functions of transport layer in detail.

UNIT IV

1. Analyze CSMA/CD in detail.
2. Analyze DQDB in detail.
3. Explain SMDS in detail.
4. Discuss Ethernet properties in detail.
5. Analyze WAN architecture in detail.

UNIT V

1. Analyze ISDN architecture in detail.
2. Analyze ISDN interfaces in detail.
3. Compare ARP and RARP in detail.

4. Analyze the functions of X.25 in detail.
5. Analyze the TCP/IP in detail.

NGM COLLEGE
DEPARTMENT OF COMPUTERSCIENCE (SF)
COURSE TITLE: DATA COMMUNICATIONS AND COMPUTER NETWORK
COURSE CODE: 17UCS413

K5 Questions

UNIT I

1. Compare analog signal and digital signal in detail.
2. Compare half duplex and full duplex communication in detail.
3. Interpret error classification in detail.
4. Explain multiplexing in detail.
5. Compare LRC and CRC with example.

UNIT II

1. Compare guided media and unguided media.
2. Compare coaxial cable and twisted pair cable in detail.
3. Discuss the structure of optical fiber in detail.
4. Compare hybrid topology and bus topology.
5. Compare Packet switching and circuit switching.

UNIT III

1. Interpret protocol communication in detail.
2. Interpret the functions of Media access control.
3. Discuss the functions of session layer
4. Explain the functions of application layer in detail.
5. Discuss the functions of physical layer

UNIT IV

1. Compare LAN and WAN.
2. Compare CSMA/CD and DQDB .
3. Discuss the working of Ethernet.
4. Explain the following.
 - a) Ethernet Properties

b) WAN Architecture

5. Explain Switched multimegabit data services in detail.

UNIT V

1. Discuss the working principle of X.25 protocol.
 2. Compare ARP and RARP in detail.
 3. Discuss transmission control protocol in detail.
 4. Interpret the different types of channels in ISDN.
 5. Explain IP addresses in detail.
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