



**JYOTHISHMATHI INSTITUTE OF TECHNOLOGY AND
SCIENCE**

Approved by AICTE, New Delhi and Affiliated to JNTU, Hyderabad

III B.Tech I- Semester COMPUTER NETWORKS(J22) 2024-25

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Objective & Descriptive Questions



UNIT-I

- 1) Explain about osi model
- 2) Explain layering scenario.
- 3) Explain briefly about guided media & unguided media
- 4) Compare osi model & tcp ip protocol suite model
- 5) Define Network hardware & Network software
- 6) Explain History of Internet?
- 7) Define Network?
- 8) Explain different types of networks?
- 9) Why are protocols needed?
- 10) Write the advantages of optical fiber over twisted-pair and coaxial cables.
- 11) What are the advantages of having layered architecture?
- 12) Write any four reasons for using layered protocols.
- 13) Discuss about Internet standards.
- 14) List out the topologies used in networks

Multiple choice Questions

1. This was the first network. * CSNET
NSFNET
ARPANET
ANSNET
2. The___is the physical path over which a message travels.
* Protocol
Signal
Medium
All the above
3. ___refers to the structure or format of the data, meaning the order in which they are presented. *
Semantics
Syntax
Timing
All the above
4. In___transmission, the channel capacity is shared by both communicating devices at all times.
simplex
half-duplex
full-duplex
full-simple
x
5. Devices may be arranged in a___topology. *
mesh
ring
bus
all of the above
6. The session, presentation, and application layers are the___support layers.
* user



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network



both (a) and (b)

upper

7. The ____ layer is responsible for the process-to-process delivery of the entire message.

transport

physical

network

data link

8. The ____ layer is responsible for the source-to-destination delivery of a packet across multiple network links

physical

network

transport

data link

9. Which of the following is an application layer service? * File transfer and access

Mail service

Remote log-in

All the above

10. _____ provides full transport layer services to applications.

* UDP

TCP

ARP

none of the above

11. When a host on network A sends a message to a host on network B, which address does the router look at?

logical

physical

port

special address

12. Why was the OSI model developed? *

The rate of data transfer was increasing exponentially

Standards were needed to allow any two systems to communicate

Manufacturers disliked the TCP/IP protocol suite.

None of the above

13. _____ cable consists of an inner copper core and a second conducting outer sheath. *

Twisted-pair

Coaxial

Fiber-optic

Shielded twisted-pair

14. The inner core of an optical fiber is _____ in composition. *

copper

glass or plastic

bimetallic

liquid



15. _____ are used for cellular phone, satellite, and wireless LAN communications. *

- Radio waves
- Infrared waves
- Microwaves
- none of the above

16. When a beam of light travels through media of two different densities, if the angle of incidence is greater than the critical angle, _____ occurs. *

- refraction
- reflection
- criticism
- incidence

17. Microwaves are _____. *

- omnidirectional
- bidirectional
- unidirectional
- none of the above

18. Signals with a frequency below 2 MHz use _____ propagation.

- * line-of-sight
- sky
- ground
- none of the above

19. A private network used within an organisation that makes use of internet technology *

- Intranet
- Extrane
- t
- Internet
- WWW

20. A huge group of networks joined together *

- Intranet
- Extranet
- Internet
- scatternet

UNIT-II

- 1) Explain about ALOHA, CSMA.
- 2) Explain various collision free protocols
- 3) Explain Ethernets?
- 4) What is the need of Framing? Explain character stuffing and bit stuffing for framing
- 5) Explain briefly about the Persistent and Non persistent CSMA protocols.
- 6) Explain IEEE 802.3 standard for Ethernet with the help of frame format.
- 7) Explain Ethernet Mac Sub layer?
- 8) Explain noisy channels



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9) Explain noiseless channels



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- 10) Explain and demonstrate Selective repeat sliding window Protocol with an example.
- 11) What are the functions of medium access control layers protocol? Explain
- 12) What is the purpose of CSMA CD? And Explain it.
- 13) What are the different types of error detection methods? Explain the CRC error Detection technique using generator polynomial x^4+x^3+1 and data 11100011
- 14) Differentiate between Virtual Circuit Versus Datagram Subnets

Multiple choice Questions

1. Which error detection method uses one's complement arithmetic? *
Checksum
blockcoding
Simple parity check
Two-dimensional parity check
2. In_____, each station is forced to send only at the beginning of the time slot. *
pure ALOHA
slotted ALOHA
impure aloha
time aloha
3. In___, collisions are avoided through the use of three strategies: the interframe space, the contention window, and acknowledgments. *
CSMA/CD
CSMA/CA
either (a) or (b)
both (a) and (b)
4. Data link control deals with the design and procedures for___communication.
node-to-node
process-to-proces
s host-to-host
peer to end
5. In the__Protocol, the sender sends one frame, stops until it receives confirmation from the receiver, and then sends the next frame. *
Simplest
Stop-and-Wait
Selective-Repeat
ARQ Go-Back-N
ARQ



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6. In cyclic redundancy checking, what is the CRC? *



The quotient
The dividend
The divisor
The remainder

7. In the___method, each station has a predecessor and a successor. *
token passing
polling
reservation
none of the above

8. Bit stuffing means adding an extra 0 to the data section of the frame when there is a sequence of bits with the same pattern as the_.

trailer
flag
header
none of the above

9. The checksum of 1111 and 1111 is_____. *
1 point
1111
1110
0000
0111

10. The___Protocol has neither flow nor error control. *
Selective-Repeat ARQ
Go-Back-N
ARQ
Stop-and-Wait
Simplest

11. ___in the data link layer separates a message from one source to a destination, or from other messages going from other sources to other destinations. *
Controlling
Framing
Digitizing
coding

12. The maximum throughput for slotted ALOHA is _____per cent.
* 36.8
18.4
12.2
none of the above

13. Bluetooth is a___technology that connects devices (called gadgets) in a small area.
wired WAN
wired LAN



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wireless WAN



wireless LAN

14. The Stop-And-Wait ARQ, Go-Back-N ARQ, and the Selective Repeat ARQ are for _____ channels.

- noiseless
- noisy
- either (a) or (b)
- neither (a) nor (b)

15. In Bluetooth, multiple _____ form a network called a _____. *

- iconets: bluenet
- scatternet;
- piconets piconets:
- scatternet bluenet;
- scatternet

16. In Selective Repeat ARQ, if 5 is the number of bits for the sequence number, then the maximum size of the receive window must be_. *

- 1
- 15
- 16
- 31

17. In _____ methods, a station cannot send unless it has been authorized by other stations. *

- controlled access
- channelization
- random access
- none of the above

18. In the _____ method, after the station finds the line idle, it sends its frame immediately. If the line is not idle, it continuously senses the line until it finds it idle. *

- p-persistent
- nonpersistent
- t 1-persistent
- none of the above

19. A Bluetooth network is called a _____.

- scatternet
- bluene
- t
- picone
- t
- datanet

20. _____ control refers to a set of procedures used to restrict the amount of data that the sender can send before waiting for acknowledgment.

Flow



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Error
Transmission
none of the
above



UNIT-III

- 1) Explain the logical addressing?
- 2) Explain about routing algorithms
- 3) Explain briefly about distance vector routing algorithm
- 4) What is congestion? Explain various congestion control algorithms?
- 5) Describe Dijkstra shortest path algorithm. Also show working of Dijkstra algorithm with the help of an example.
- 6) With an example explain the Dynamic routing algorithms used in computer networks.
- 7) What are the reasons for congestion? What are the problems with congestion?
- 8) Classify the static and dynamic routing algorithms? Explain the basic concept of flooding.
- 9) Explain the general principles of congestion prevention policies.

Multiple choice Questions

1. Connecting two or more networks to form a single network is called *
interconnecting
intraconnecting
internetworkin
g
intranetworkin
g
2. which one of the following algorithm is not used for congestion control *
traffic aware routing
routing information protocol
admission control
load shedding
3. which of the following routing algorithms can be used for network layer design *
shortest path algorithm
distancevector routing
link state routing
all of the mentioned above
4. Which one is not the function of network layer *
routing
inter networking
congestion control
error control
5. The RIP stands for *
routing internet protocol
ready information protocol
rest in peace protocol
routing information



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protocol

6.The packet sent by a node to the source to inform it of congestion is



called _____ *

choke

explicit

discard

backpressure

7. which level is the network layer in the OSI model * third level

fourth level

second level

fifth level

8. Internet protocol is connectionless * True

False

9. In distance vector routing each node periodically shares its routing table with_ and whenever there is change. *

every other node

its immediate neighbors

one neighbor

none of the above

10. Network layer protocol exists

in * switches

host

gateways

bridges

11. Does Network layer in TCP/IP and OSI Model are same * True

False

12. The network layer protocol for internet is * Ethernet

Internet protocol

Hypertext transfer

protocol file transfer

protocol

13. OSPF stands for *

Open Shortest Path First

Open Secure Protocol First

Open Source Protocol Fix

Open System Path First

14. In _____ routing, the least cost route between any two nodes is the route with the minimum distance. *

path vector

distance vector



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link state vector



hierarchical vector

15. Two broad categories of congestion control * open control and closed control
open loop and closed loop
Active control and Passive control
Active loop and Passive Loop

16. The technique in which a congested node stops receiving data from the immediate upstream node or nodes is called as__*
admission policy
back pressure
forward signalling
backward signalling

17.A_____routing table is updated periodically using one of the dynamic routing protocols. *
static
dynamic
hierarchical
none of the above

18. The network layer is concerned with_____of data *
bits
frames
packets
bytes

19. Internet protocol versions * IPV6 , IPV5
IPV4, IPV3
IPV6
,IPV5
IPV4
,IPV6

20. Discarding policy is mainly done by_____*
sender
receiver
router
switch



UNIT-IV

- 1) Draw and explain each field in the TCP Segment header.
- 2) Explain briefly about QUALITY OF SERVICE?
- 3) Explain about UDP?
- 4) How a Connection is established in a Transport Protocol. Explain three way handshake protocol scenarios for establishing a connection.
- 5) Explain in detail about Connection management.
- 6) How does UDP differ from TCP? List the applications of UDP.
- 7) Draw and explain the header format for a user datagram protocol.
- 8) Illustrate the connection establishment and release in transport layer.
- 9) How crash recovery is managed at the transport layer.
- 10) Illustrate the Scenarios for establishing a connection using a Three-Way Handshake.
- 11) Explain in detail about the Real Time Transport Protocol

Multiple choice Questions

1. Which of the following are transport layer protocols used in networking? * TCP and FTP

UDP and HTTP

TCP and UDP

HTTP and FTP

2. Transmission control protocol_____*

is a connection-oriented protocol

uses a three way handshake to establish a connection

receives data from application as a single stream

all of the mentioned

3.A_____ is a TCP name for a transport service access point.

* port

pipe

node

protocol

4. Which of the following is a transport layer protocol? * stream control transmission protocol

internet control message protocol

neighbor discovery protocol

dynamic host configuration protocol

5. The receiver of the data controls the amount of data that are to be sent by the sender is referred to as_____*

Flow control

Error control

Congestion control



Error detection

6. Connection establishment in TCP is done by which mechanism? * Flow control

Three-Way Handshaking

Forwarding

Synchronization

7. Size of TCP segment header ranges between _____ *

16 and 32 bytes

16 and 32 bits

20 and 60 bytes

20 and 60 bits

8. The sizes of source and destination port address in TCP header are _____ respectively. *

6-bits and 32-bits

16-bits and 16-bits

32-bits and 16-bits

32-bits and 32-bits

9. In Three-Way Handshaking process, the situation where both the TCP's issue an active open is _____ *

Mutual open

Mutual Close

Simultaneous open

Simultaneous close

10. What allows TCP to detect lost segments and in turn recover from that loss? * Sequence number

Acknowledgment number

Checksum

Both Sequence & Acknowledgment number

11. Which of the following is false with respect to UDP? * Connection-oriented

Unreliable

Transport layer protocol

Low overhead

12. What is the header size of a UDP packet? * 8 bytes

8 bits

16 bytes

124 bytes

13. "Total length" field in UDP packet header is the length of _____ *

1 point

Only UDP header



Only data
Only checksum
UDP header plus data

14. Which is the correct expression for the length of UDP datagram? *
UDP length = IP length – IP header's length
UDP length = UDP length – UDP header's length
UDP length = IP length + IP header's length
UDP length = UDP length + UDP header's length

15. The ___ field is used to detect errors over the entire user datagram. *
udp header
checksum
source port
destination port

16. which one is not transport layer service *
flowcontrol
error control
routing
segmentation

17. Transport layer receives data in the form of _____ *
Packets
Byte streams
Bits stream
Both packets and Byte stream

18. UDP packets are called as _____
Segments
Checksum
Frames
Datagrams

19. Transport layer may be responsible for flow and error Control, like the *
Data Link Layer
Physical Layer
Subnet Layer
Application Layer

connectionless protocol treats each segment * closely
overlap
Separately
Dependantly



1. Write about electronic mail in detail
2. Explain the working of DNS
3. Write short notes on the following
 - a) SNMP
 - b) SMTP
 - c) POP3
4. Define FTP. Discuss in brief about FTP
5. Explain in brief about the formats of HTTP request and Response messages?
6. What is a name server? List and explain the features of various name servers.
7. Describe importance of DNS in application layer
8. Explain briefly about the MPEG standard to compress videos
9. Discuss in brief about HTTP

Multiple choice Questions

1. In HTTP, the well-known port number _____ is used for the connection
2. SMTP stands for _____.
3. FTP stands for _____.
4. SNMP stands for _____.
5. In FTP, there are three types of _____ modes: stream, block, and compressed
6. The formal protocol that defines the MTA client and MTA server in the Internet is called _____.
7. UDP is called a _____ transport protocol
8. TCP stands for _____
9. This is not an application layer protocol.
 - A) HTTP
 - B) SMTP
 - C) FTP
 - D) TC



10. E mail service is handled by which layer

- A) Application layer B) Presentation layer C) Session layer D) transport

11. In the DNS, the names are defined in _____ structure.

- A) a linear list B) an inverted-tree C) a graph D)

12. When a user logs into a local time-sharing system, it is called _____ login.

- A) Temporary B) remote C) local D) permanent

13. In FTP, the well-known port _____ is used for the control connection and the well-known port _____ for the data connection.

- A) 22; 21 B) 20; 21 C) 21; 22 D) 21; 20

14. When the sender and the receiver of an email are on different systems, we need only _____

- A) Two UAs and one pair of MTAs B) one MTA C) two UAs D) two pair of MTA and Two UAs

15. MTA stands for

- A) Model Transfer Agent B) Message Transfer Agent
C) Model Transport Agent D) Message Transport Agent