**PART A**

1. Protocol used for mapping the physical addresses to logical address is
2. ARP
3. RARP
4. ICMP
5. IGMP

ANSWER: B

1. Protocol used to resolve the logical address to an ethernet address
2. ARP
3. RARP
4. ICMP
5. IGMP

ANSWER: A

1. UDP provides additional services over Internet Protocol
2. Routing and switching
3. Sending and receiving of packets
4. Multiplexing and demultiplexing
5. Demultiplexing and error checkin

ANSWER: D

1. The transport layer protocol used for real time multimedia
2. TCP
3. UDP
4. ARP
5. RARP

ANSWER: B

1. One of the header fields in an IP datagram used to prevent packet looping
2. Header checksum
3. Fragment Offset
4. TOL
5. TOS

ANSWER: C

1. In application layer what is the maximum size of data that pass on to the TCP layer
2. 216 Bytes
3. 216 Bits
4. 65536 Bytes
5. Any size

ANSWER: D

1. The size of a congestion window increases exponentially in the slow start phase of \_\_\_\_algorithm
2. TCP congestion control
3. UDP congestion control
4. TCP Error control
5. UDP Error control

ANSWER: A

1. ICMP always reports error messages to
2. Destination
3. Router
4. Source
5. Previous router

ANSWER: C

1. Which program is used to find a host is live and responding during debugging
2. Ping
3. Shell
4. Traceroute
5. Tracert

ANSWER: A

1. Command used to trace the path of a packet from the source to destination in windows
2. Ping
3. Locater
4. Traceroute
5. Tracert

ANSWER: D

1. No ICMP error message will be generated for a datagram for a \_\_\_ Address
2. Unicast
3. Multicast
4. Physical
5. Logical

ANSWER: B

1. Which mechanism is used for connection establishment in TCP
2. Forwarding
3. Flow control
4. Synchronization
5. Three-Way Handshaking

ANSWER: D

1. Field that is used to detect errors over the entire user datagram
2. Checksum
3. source port
4. udp header
5. destination port

ANSWER: A

1. If the value in the protocol field is 6, The transport layer protocol used is
2. TCP
3. UDP
4. ICMP
5. IGMP

ANSWER: B

1. The filed that helps to check rearrangement of fragments
2. Flag
3. TTL
4. TOS
5. Offset

ANSWER: D

1. The traffic class field is used to specify the priority of the IP packet which is a similar functionality to the \_\_\_field in the IPv4 header
2. TOS
3. TTL
4. Flag
5. Offset

ANSWER: A

1. IPv6 packet can live up to \_\_\_ router hops
2. 256
3. 512
4. 255
5. 511

ANSWER: C

1. Internet Group Management Protocol (IGMP) relates to
2. Session Layer
3. Transport Layer
4. Network Layer
5. Data link Layer

ANSWER: C

1. The maximum transmission unit value for FDDI ring is
2. 1500
3. 2552
4. 4352
5. 2343

ANSWER: C

1. The length of logical address in TCP/IP is
2. 64 bits
3. 32 bits
4. 48 bits
5. 16 bits

ANSWER: B

1. An ARP packet is encapsulated directly into \_\_\_\_ Frame
2. Physical
3. Network
4. Data link
5. Transport

ANSWER: C

1. If 8bytes are received from sender, how many bytes can be sent as an acknowledgment number in case of TCP header
2. 8
3. 9
4. 10
5. 7

ANSWER: 9

1. The header length of a TCP header varies between
2. 5 and 10
3. 10 and 15
4. 5 and 20
5. 10 and 20

ANSWER: C

1. Maximum no of bytes can be accommodated for optional information in TCP header
2. 32 Bytes
3. 16 Bytes
4. 40 Bytes
5. 20 Bytes

ANSWER: C

1. In TCP header \_\_\_\_field provides information regarding the first byte of segment to destination host.
2. Acknowledgment number
3. Window number
4. Urgent pointer
5. Sequence number

ANSWER: D

1. FIN is used to
2. Establish the connection
3. Terminate the connection
4. Reset the connection
5. Synchronise the sequence connections

ANSWER: B

1. Mapping used to update the logical address and physical address in cache table manually
2. Dynamic
3. Static
4. Physical
5. Logical

ANSWER: B

1. The protocol used to create sub netting effect
2. ARP
3. RARP
4. ICMP
5. Proxy ARP

ANSWER: A

1. The protocol which companion with IGMP
2. UDP
3. TCP
4. ICMP
5. None

ANSWER: D

1. Number of streams require for each connection in TCP
2. 1
3. 2
4. 3
5. 0

ANSWER: B

1. Number of socket addresses needed to use the services of UDP
2. 1
3. 2
4. 3
5. 4

ANSWER: B

1. UDP packets are encapsulated in the form of
2. Data link frame
3. Ethernet frame
4. TCP segment
5. IP datagram

ANSWER: D

1. Protocol uses an acknowledge mechanism to check the safe and sound arrival of data
2. ARP
3. RARP
4. TCP
5. UDP

ANSWER: C

1. The attack susceptible to a serious security problem in connection establishment of TCP
2. ACK flooding
3. SYN flooding
4. FIN flooding
5. RST flooding

ANSWER: B

1. Which of the following is to uniquely identify TCP connection establishment
2. Port number
3. Port address
4. Socket
5. IP address

ANSWER: C

1. Which of the following is not a component of an ARP package
2. Cache table
3. Cache control module
4. Checksum
5. Queues

ANSWER: C

1. Two protocols can be used instead of RARP
2. DHCP and ICMP
3. Boot and ICMP
4. IGMP and ICMP
5. DHCP and Boot

ANSWER: D

1. Additional services provided by the Transport protocol over Network Protocol is
2. End to end connectivity
3. Packet delivery in the correct order
4. Detection of duplicate packets
5. Recovery from packet losses

ANSWER: A

1. The program used to route the packets from source to destination in UNIX
2. Tracert
3. Traceroute
4. Ping
5. Shell

ANSWER: B

1. TCP timer used for measuring the time of connection maintenance in TIME\_WAIT state
2. Keep alive Timer
3. Persist Timer
4. Retransmission Timer
5. 2 Maximum Segment lifetime Timer

ANSWER: D

1. Algorithm that represents impossibility of updating RTT estimator during the arrival acknowledgement of retransmitted data at the occurrence of timeout phase in TCP?
2. Karn's algorithm
3. NAGLE algorithm
4. Clark's Solution
5. None of the above

ANSWER: A

1. Mechanism used in transport layer supplies multiple network connections along with the distribution of traffic over them in round- robin basis?
2. Downward multiplexing
3. Upward multiplexing
4. Crash recovery
5. Bufferi ng & Flow control

ANSWER: A

1. Additional services provided by the UDP protocol over Internet Protocol is
2. Demultiplexing and error checking
3. Routing and switching
4. Multiplexing and demultiplexing
5. Sending and receiving of packets

ANSWER: C

1. In a simple echo-request message, the value of the sum is 1010100010100000.

Then, value of checksum is -------------------

A. 01010000 01011100

B. 10101111 01011100

C. 01010000 10100011

D. 0101011101011111

ANSWER: D

1. Suppose a TCP connection is transferring a file of 2000 bytes. The first byte is numbered 20001. What is the sequence number of the segment if all data is sent in only one segment?

A. 20000

B. 20001

C. 22001

D. 21001

ANSWER: B

1. During datagram switching, the packets are placed in \_\_\_\_\_\_\_\_\_\_ to wait until the given transmission line becomes available.

A. QUEUE

B. STACK

C. HASH

D. ROUTING TABLE

ANSWER: A

1. During debugging, we can use the \_\_\_\_\_\_\_\_\_\_\_\_ program to find if a host is alive and responding.

A. Trace route

B. Ping

C. TTL

D. Java

ANSWER: B

1. Which field helps to check rearrangement of the fragments?

A. offset

B. Flag

C. Identifier

D. TTL

ANSWER: A

1. IP is a .................... Datagram

A. unreliable

B. static

C. connection oriented

D. reliable

ANSWER: A

1. The TTL field has value 10. How many routers (max) can process this datagram?

A. 9

B. 11

C. 10

D. 8

ANSWER: C

1. ICMP is ...................... layer protocol

A. Data link layer

B. Network Layer

C. Physical Layer

D. Transport Layer

ANSWER: B

1. Which of these is not a type of error-reporting message?

A. Source Quench

B. Destination unreachable

C. Time exceeded

D. Router error

ANSWER: D

1. ARP is a .........

A. 8 bit field

B. 12 bit field

C. 16 bit field

D. 10 bit field

ANSWER: C

1. In ARP request is broadcast and Reply is .......

A. Multicast

B. Unicast

C. Universal

D. Multi Directed

ANSWER: B

1. Packets in IPv4 called as

A. Frames

B. Datagrams

C. Stearms of bits

D. Data

ANSWER: B

1. During error reporting, ICMP always reports error messages to \_\_\_\_\_\_\_\_

A. Destination

B. Source

C. Next Router

D. Next Hop

ANSWER: B

1. In IPv4 when datagram is encapsulated in the frame , the total size of the datagram must be less than the ..........

A. MUT

B. MTU

C. MTA

D. MAC

ANSWER: B

1. ICMP error message will not be generated for a datagram having a special address such as \_\_\_\_\_\_\_

A. 127.0.0.0

B. 192.168.10.1

C. 127.162.10.1.0

D. 11.7

ANSWER: A

1. The IPv4 header field formerly known as the service type field is now called as.............

A. Checksum

B. Differentiated Service

C. Types Of Service

D. Fragments

ANSWER: B

1. Which of the following demerits does Fragmentation have?

A. complicates routers

B. open to DOS attack

C. overlapping of fragments.

D. All of the mentioned

ANSWER: D

1. In windows \_\_\_\_\_\_\_\_\_\_\_\_ can be used to trace the route of the packet from the source to the destination.

A. tracert

B. trace route

C. ping

D. location

ANSWER: A

1. ARP helps to obtain.........

A. Logical address

B. MAC address

C. Port Address

D. Routing Table

ANSWER: B

1. DHCP stands for ...........

A. Dynamic host configuration Provide

B. Dynamic host configuration Protocol

C. Digital host communication Protocol

D. Digital host communication Provider

ANSWER: B

1. Divide the Datagram to pass through the network is called

A. Types of service

B. Fragmentation

C. Routing

D. Best effort Delivery

ANSWER: B

1. Echo request and Echo reply message are designed for

A. Echo purpose

B. Diagnostic purpose

C. synchronization process

D. Address process

ANSWER: B

**PART B (Problem based questions)**

1. Let the size of congestion window of a TCP connection be 64 KB when a timeout occurs. The round trip time of the connection is 250 msec and the maximum segment size used is 2 KB. The time taken (in msec) by the TCP connection to get back to 64 KB congestion window is
2. 1100 TO 1300
3. 4000 TO 4500
4. 5000 TO 5500
5. 1300 TO 2000

ANSWER: C

1. Let the size of congestion window of a TCP connection be 64 KB when a timeout occurs. The round trip time of the connection is 200 msec and the maximum segment size used is 2 KB. The time taken (in msec) by the TCP connection to get back to 32 KB congestion window is
2. 1100 TO 1300
3. 800 TO 1000
4. 1500 TO 2000
5. 2300 TO 3000

ANSWER: B

1. On a TCP connection, current congestion window size is 6 KB. The window advertised by the receiver is 6 KB. The last byte sent by the sender is 10240 and the last byte acknowledged by the receiver is 8192. The current window size at the sender is
2. 10240
3. 8192
4. 7168
5. 6144

ANSWER: D

1. On a TCP connection, current congestion window size is 8 KB. The window advertised by the receiver is 7 KB. The last byte sent by the sender is 10240 and the last byte acknowledged by the receiver is 8192. The current window size at the sender is
2. 10240
3. 8192
4. 7168
5. 6144

ANSWER: D

1. A Datagram of 5500 B(20 B of IP header + 5480 IP playload) reached at router and must be forward to a link with MTU of 1500 B. how many fragments will be generated.
2. 3
3. 4
4. 5
5. 6

ANSWER: 5

1. A Datagram of 5000 B(20 B of IP header + 4980 IP playload) reached at router and must be forward to a link with MTU of 1000 B. What is the MF value at 6th packet.
2. 0
3. 1
4. 2
5. 3

ANSWER: A

1. A Datagram of 2000 B(20 B of IP header + 1980 IP playload) reached at router and must be forward to a link with MTU of 500 B. What is the offset value of 4th packet.
2. 120
3. 180
4. 60
5. 240

ANSWER: B

1. For the following information original timestamp: 64, receive timestamp: 78, transmit timestamp: 80, return time: 87 find the calculate the round-trip time
2. 20
3. 18
4. 21
5. 14

ANSWER: C

1. A total of 1440 bytes that is routed through an interface with MTU of 576 bytes calculate flag , fragment offset, total length of 1st fragment of a packet
2. 0, 1, 552
3. 1, 0, 556
4. 1, 0, 572
5. 0, 1, 574

ANSWER: C

1. If original timestamp is 68, receive timestamp is 82 and transmit timestamp is 76, return time is 95 then round trip time is.
2. 5
3. 14
4. 26
5. 33

ANSWER: D

1. If original timestamp is 52, receive timestamp is 74 and transmit timestamp is 76, return time is 94 then Time difference is.
2. 2
3. 3
4. 4
5. 5

ANSWER: A

1. If TCP connection has been established, a host is only allowed to send an amount of data equivalent to 1 MSS before waiting for acknowledgement. Say that the MSS is 1024 bytes and the RTT (round trip time) is 64ms. What would be the initial data rate of the host?
2. 12 \*103 Bytes/s
3. 16 \*103 Bytes/s
4. 16 \*10-3 Bytes/s
5. 12 \*10-3 Bytes/s

ANSWER: B

1. If TCP connection has been established, a host is only allowed to send an amount of data equivalent to 1 MSS before waiting for acknowledgement. Say that the MSS is 1024 bytes and the RTT (round trip time) is 64ms. What would be the data rate of the host If the host is allowed to send an amount of data equivalent to 64 MSS?
2. 576 KB
3. 1024 KB
4. 128 KB
5. 64 KB

ANSWER: B

1. Suppose an application generates chunks of 20 bytes of data every 20 msec, and each chunk gets encapsulated in a TCP segment and then an IP datagram. What percentage of each datagram will be overhead, Assume that both the TCP and IP header has its Options field empty.
2. 33.33
3. 44.44
4. 55.55
5. 66.66

ANSWER: D

1. In a simple echo-request message, the value of the sum is 01010011 01011100. Then, value of checksum is \_\_\_\_\_
2. 01010000 01011100
3. 01010000 01011101
4. 11000000 01011100
5. 10101100 10100011

ANSWER: D