Computer Networks Questions & Answers – IPV4 and IPV6 Comparision

This set of Computer Networks Multiple Choice Questions & Answers (MCQs) focuses on "IPV4 and IPV6 Comparision".

1. Which of the following is not applicable for IP?
a) Error reporting
b) Handle addressing conventions
c) Datagram format
d) Packet handling

View Answer

Answer: a
Explanation: The Internet Protocol is the networking protocol that establishes the internet by relaying datagram across network boundaries. ICMP is a supporting protocol for IP which handles the Error Reporting functionality.

2. Which of the following field in IPv4 datagram is not related to fragmentation?
a) Flags
b) Offset
c) TOS
d) Identifier

View Answer

Answer: c
Explanation: TOS-type of service identifies the type of packets. It is not related to fragmentation but is used to request specific treatment such as high throughput, high reliability or low latency for the IP packet depending upon the type of service it belongs to.

3. The TTL field has value 10. How many routers (max) can process this datagram?
a) 11
b) 5
c) 10
d) 1

View Answer

Answer: c

Explanation: TTL stands for Time to Live. This field specifies the life of the IP packet based on the number of hops it makes (Number of routers it goes through). TTL field is decremented by one each time the datagram is processed by a router. When the value is 0, the packet is automatically destroyed.

4. If the value in protocol field is 17, the transport layer protocol used is _____
a) TCP
b) UDP
c) ICMP
d) IGMP

View Answer

Answer: b

Explanation: The protocol field enables the demultiplexing feature so that the IP protocol can be used to carry payloads of more than one protocol type. Its most used values are 17 and 6 for UDP and TCP respectively. ICMP and IGMP are network layer protocols.

5. Which field helps to check rearrangement of the fragments?
a) offset
b) flag
c) ttl
d) identifier

View Answer

Answer: a

Explanation: The Fragment Offset field specifies where the fragment fits in the original datagram. The offset of the first fragment will always be 0. The size of the field (13 bits) is 3-bits shorter than the size of the total length field (16 bits).

6. The size of an IP address in IPv6 is _____
a) 4bytes
b) 128bits
c) 8bytes
d) 100bits

View Answer

Answer: b

Explanation: An IPv6 address is 128 bits long. Therefore, 2^{128} i.e. 340 undecillion unique

addresses are available in IPv6. IPv4 has only 4 billion possible addresses and IPv6 would be a brilliant alternative in case IPv4 runs out of possible new addresses.

7. The header length of an IPv6 datagram is _____
a) 10bytes
b) 25bytes
c) 30bytes
d) 40bytes

View Answer

Answer: d
Explanation: IPv6 datagram has fixed header length of 40bytes, which results in faster processing of the datagram. There is one fixed header and optional headers which may or may not exist. The fixed header contains the mandatory essential information about the packet while the optional headers contain the optional "not that necessary" information.

8. In an IPv6 header, the traffic class field is similar to which field in the IPv4 header?
a) Fragmentation field
b) Fast switching
c) TOS field
d) Option field

View Answer

Answer: c
Explanation: The traffic class field is used to specify the priority of the IP packet which is a similar functionality to the Type of Service field in the IPv4 header. It's an 8-bit field and its values are not defined in the RFC 2460.

9. IPv6 does not use _____ type of address.
a) Broadcast
b) Multicast
c) Any cast
d) Unicast

View Answer

Answer: a
Explanation: There is no concept of broadcast address in IPv6. Instead, there is an anycast address in IPv6 which allows sending messages to a group of devices but not all devices in a network. Anycast address is not standardized in IPv4.

10. Which are the features present in IPv4 but not in IPv6?
a) Fragmentation
b) Header checksum

c) Options
d) Anycast address

View Answer

Answer: d
Explanation: There is an anycast address in IPv6 which allows sending messages to a group of devices but not all devices in a network. Anycast address is not standardized in IPv4.

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