

CS425

Homework 3

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1 Sol 1

The value in the upper layer protocol field : ICMP (0x01).

2 Sol 2

The IP header is 20 bytes long because the header length of the datagram is 20 bytes. Total length given here is 56 bytes and the number of bytes in the payload = total length - header length.

So, the number of bytes in the payload = $56 - 20 = 36$ bytes.

3 Sol 3

As the More fragments : Not set, so the IP datagram has not been fragmented.

4 Sol 4

The value in the Identification field : 32946 (0x80b2) and the TTL field : 1.

5 Sol 5

Yes, the message corresponding to the given packet has been fragmented.

6 Sol 6

As the More fragments : Set, so the IP datagram has been fragmented.

7 Sol 7

The Fragment offset : 0 which implies this is the first fragment.

8 Sol 8

The Fragment offset : $1480 \neq 0$ which implies this is not the first datagram fragment.

9 Sol 9

As the More fragments : Not set, so there are no more fragments.

10 Sol 10

The following fields have been changed in the IP header between the first and second fragment :

1. Total length in first fragment : 1500 and second fragment : 520.
2. Flag in first fragment : 0x02 and second fragment : 0x00.
3. More fragments in first fragment : Set and second fragment : Not set.
4. Fragment offset in first fragment : 0 and second fragment : 1480.
5. Header Checksum in first fragment : 0xda69 and second fragment : 0xfd84.