

CS425 : Computer Networks

Assignment-3

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April 5, 2024

Fig.1

Ans1: Value in the upper layer protocol field = ICMP(0x01).

Ans2: Bytes in the IP header = 20bytes

Bytes in the payload of the IP datagram = 36bytes

Total length is of 56 bytes and bytes in IP header is 20 bytes so remaining bytes are in the payload of IP datagram.

Ans3: The given IP datagram is not fragmented because

Fragment offset is 0 and the flag More fragments has not been set.

Ans4: Value in the Identification field = 32496(0x80b2)

Value on the TTL field = 1

Fig.2

Ans5: Yes, the above packet is fragmented.

Ans6: In the above packet

Fragmented offset = 0 and the flag More fragments = 1

This indicates that the packet is fragmented.

Ans7: Since, Fragmented offset = 0, suggests that this is the first fragment.

Fig.3

Ans8: Since the value of the fragment offset is not zero indicates that this is not the first fragment (Fragment offset = 1480).

Ans9: No, since the flag More segment has not been set.

Ans10: There are four changes:

- Total Length is changed from 1500 in the first one to 520 in the second one.
- Flags have been changed from 0x02 in the first fragment, to 0x00 in the second fragment. Essentially, the first fragment has its more fragments field set in the flag while the second fragment does not.
- Fragment offset has changed from being 0 for the first fragment to being 1480 for the second fragment.
- Header checksum has changed from being 0xda69 in the first one to being 0xfd84 in the second one.