Lab 3

1. 00:d0:59:a9:3d:68
2. 00:06:25:da:af:73, no, it's the ethernet address of the router to which the computer that created this file was connected to
3. 0x0800, aka IPv4
4. there appear to be 54 bytes before the ASCII G, these represent the following:

• The ethernet frame that it's in(these are the first 14 bytes that contain the destination address, source address, and

frame type)

• The IP header (20 bytes)

• The TCP header (20 bytes)

5) 00:06:25:da:af:73, no, it is the address of the router to get to the subnet

6) 00:d0:59:a9:3d:68

7) 0x800

8) there appear to be 54 bytes before the ASCII O, they are the same as the get, being

• The ethernet frame that it's in(these are the first 14 bytes that contain the destination address, source address, and

frame type)

• The IP header (20 bytes)

• The TCP header (20 bytes)

9) The Internet Address column contains the IP address, the Physical Address

column contains the MAC address, and the type indicates the protocol type.

10) The hexadecimal value for the source address is 00:d0:59:a9:3d:68. The hex value for

the destination address is ff:ff:ff:ff:ff:ff, the broadcast address.

11) The hexadecimal value for the Ethernet Frame type field is 0x0806 for ARP.

12) a) The ARP opcode field begins 20 bytes from the very beginning of the Ethernet

frame.

b) The hexadecimal value for the opcode field within the ARP-payload of the request is

0x0001, which means request.

c)Yes, the ARP message contains the address 192.168.1.105 for the sender.

d)The field “Target MAC address” is set to 00:00:00:00:00:00 to question the

machine whose corresponding IP address (192.168.1.1) is being queried.

13) a)The ARP opcode field begins 20 bytes from the very beginning of the Ethernet

frame.

b)The hex value for opcode field within the ARP-payload of the request is

0x0002, which means reply.

c)The answer to the earlier ARP request appears in the”Sender MAC address”

field, which contains the Ethernet address 00:06:25:da:af:73 for the sender

with IP address 192.168.1.1.

14) The hex value for the source address is 00:06:25:da:af:73 and for the

destination is 00:d0:59:a9:3d:68 .

15) There is no reply in our trace because our machine is not the one that sent the request, the arp request is broadcasted, but the reply is only received by the sender's ethernet address.

--Extra Credit--

1. Once the router/adaptor received the destination IP address (even if the incorrect MAC address was entered) the router/adapter would remove the IP address from the Ethernet frame, and using ARP, it would get the correct MAC address of the destination
2. The default time that it keeps the ARP table entry is 20 mins. After the 20mins is up, the ARP table will be refreshed. Because the neighboring device can be out of the network so the ARP table should be updated according to the network states. When the table gets refreshed the content will be erased