For all the observations and explanations create a single report.
Attach screenshots in report.
Naming Convention: <Roll_No>HW2.zip

Q1. [1 +2]

a) Learn to use the ifconfig command, and figure out the IP address of your network interface. Put a screenshot.
b) Go to the webpage https://www.whatismyip.comand find out what IP is shown for your machine. Are they identical or different? Why?

Q2. [1 +2 + 2 + 2]

a) Understand how to use the ping command on Linux to find out the network latency.
b) Connect a second machine to the same home/campus network that your laptop is connected to. Disable its firewall, and find out its IP address. Then, send 100 ping messages to this device from your laptop. Note the median, 90 percentile and 99 percentile latency. Put a screenshot.
c) Send ping messages to www.amazon.com Note the median, 90 percentile and 99 percentile latency. Put a screenshot.
d) In the previous experiments, note the number of packets dropped too. Which of them has the highest number of packet drops and higher ping latency? Why?

Q3. [[1 +1] + 1]

a) Write and explain the command to test whether you can send a single packet with mtu 2000 to 'www.google.com'. If the test failed, what could be some of the reasons that it didn't work? (Assume client, server and all intermediate nodes are up).
b) Write the command to display all active tcp connections with pids

Q4. nslookup [[2+1] + [2 +1]]

a) Get an authoritative result in nslookup. Put screenshot. Explain how you did it.
b) Find out time to live for any website on the local dns. Put Screenshot. Explain in words (with unit) that after how much time it would be expired.

Q3. traceroute google.com [2+2+2+2]

a) each probe must be sent at interval of 12345 milliseconds
b) 5 probes for each hop must be sent
c) display only 4th to 7th hops. all these conditions must be satisfied using only a single traceroute query, give explanation.

Q4. [2+1] Make your ping command fail for 127.0.0.1 (with 100% packet loss). Explain how you do it. Put a screenshot that it failed.

Q5. [2+1] Perform reverse domain lookup using dig command for google.com. Put Screenshot and explain