4.1.

A) What modes do we have to configure on each network adapter?

Static, Dynamic

B) What command the IP addresses can be configured with?

ipconfig

4.2.

A) What is the meaning of the routing table?

A routing table is a set of rules, often viewed in table format, that is used to determine where data packets traveling over an Internet Protocol (IP) network will be directed.

B) What command the access of a direct network can be configured with?

route add –net <ip addr> eth0

C) What command the access of a remote network can be configured with?

route add –net <ip addr> gw

You would have to specify the destination network and gateway.

4.3.

A) How can we find the number of routers between two nodes? Determine the command.

Traceroute (tracert).

B) What does RTT (Round-Trip Time) value prove?

It measures the time it takes for a data packet to travel from the source to the destination and back to the source.

4.4.

A) How many 16-bit fields does Ipv6 address in a preferred form contain?

It contains **eight** 16 bit fields

B) Which compression rules did you apply to shorten the Ipv6 address?

* Zero Compression (Rule 1): When there are continuous zeros (0s) in the IPv6 address notation, they are replaced with :: . This rule can only be applied once.
* Leading Zero Compression (Rule 2): Leading zeros (0s) in the 16 bits field can be removed. But each block in which you do this, must have at least one number remaining. If the field contains all zeros (0s), you have to leave one zero (0) remaining.
* Discontinuous Zero Compression (Rule 3): When zeros (0s) are present in a discontinuous pattern in IPv6 address notation, then at only one junction, the zeros (0s) are replaced with :: .

4.5.

A) How many IPv6 addresses does the network adapter of your VM have?

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B) In what way were the interface ID parts of the IPv6 addresses of the network adapter produced? Justify your answer.

The interface ID parts of the IPv6 addresses of the network adapter are derived from its MAC address. This process ensures that each network adapter has a unique IPv6 address

4.6.

A) Can a routing table include static routes?

Yes

B) What is the difference between the access of a remote network and that of a direct network?

Remote Network Access: This is the ability to access various resources through a network from a different location. These resources can be files, virtual applications, virtual desktops, virtual servers, physical servers, network devices, and even physical desktops, among others. Remote network access has made it possible for people to access resources from any location, even from across the globe.

Direct Network Access: This typically refers to the ability to access network resources without the need for remote access protocols. For example, when you’re physically connected to a network via Ethernet or Wi-Fi, you’re using direct network access. Direct network access often provides faster speeds and lower latency than remote network access because the data doesn’t have to travel over the internet or through a VPN. However, it requires you to be physically present in the location of the network.

4.7.

A) Above which protocol does the traceroute6 command operate by default?

The traceroute6 command operates above the UDP (User Datagram Protocol) and the ICMPv6 protocol by default.

B) What do the three asterisks (\*\*\*) denote in the output of traceroute command?

The three asterisks (\*\*\*) in the output of the traceroute command indicate that the probe received no response from the destination within the timeout period.