

MID TERM EXAMINATION-September 2023

Subject Name: Exploring the Networks

Time: 01 Hr

Maximum marks: 30

(Section A) Attempt any two questions each question carries (06) marks.

1. a) What are the fields of IP address and different classes of IP address and its range with default mask for each class?

b) A host with IP address 128.23.67.3 sends a message to the host with IP address 193.45.23.7. Does the message travel through any router? Assume no subnetting. Explain with reason.
2. a) What do you mean by a network reference model? Discuss the necessity of a reference model?

b) Put the following in order of encapsulation:
Packets
Frames
Bits
Segments
3. Describe the ways to access the Cisco IOS device using CLI mode. Write the name of two system commands that are used to store the device configuration.

(Section B) Attempt both the questions each question carries 06 marks

4. What do you mean by network topology? Discuss the problems and benefits of any three topologies? Give the name of the best network topology with reasons?
5. Which layer ensures the trustworthy transmission of data across a physical link and is primarily concerned with physical addressing, line discipline, network topology, error notification, ordered delivery of frames, and flow control? Describe this layer of services in detail with OSI model.

(Section C) Compulsory Question (06 marks)

6. For your college premises the IP address 178.13.0.0 has been acquired. You need to create following subnetting scheme:

- a) 40 Subnets with each subnet 220 hosts
- b) 24 Subnets with each subnet 90 hosts
- c) 15 Subnets with each subnet 80 hosts

What is the maximum and minimum number of bits that can be borrowed?