Section 1:

OSI Model

1. Which layer of the OSI model is responsible for providing a reliable connection-oriented service?

(A) Transport layer

(B) Network layer

(C) Application layer

(D) Data link layer

2. Which layer of the OSI model is responsible for addressing and routing of packets?

(A) Physical layer

(B) Network layer

(C) Transport layer

(D) Session layer

3. Which of the following is NOT a function of the presentation layer?

(A) Data encryption

(B) Data compression

(C) Error detection

(D) Data formatting

4. Which layer of the OSI model is responsible for framing data into bits?

(A) Physical layer

(B) Data link layer

(C) Network layer

(D) Transport layer

5. What is the purpose of the middleware layer in the OSI model?

(A) To provide communication services between applications

(B) To ensure reliable data transmission

(C) To convert data into different formats

(D) To manage network resources

TCP Layer

1. Which of the following is a function of the TCP layer?

(A) Flow control

(B) Error detection

(C) Congestion control

(D) All of the above

2. What is the purpose of a TCP sequence number?

(A) To identify packets in order

(B) To prevent duplicate packets

(C) To control the flow of data

(D) To detect errors

3. Which of the following TCP flags is used to indicate that a packet is the last in a sequence?

(A) FIN

(B) SYN

(C) PSH

(D) RST

4. What is the difference between a TCP socket and a UDP socket?

(A) TCP sockets are connection-oriented, while UDP sockets are connectionless.

(B) UDP sockets are faster than TCP sockets.

(C) TCP sockets are more reliable than UDP sockets.

(D) UDP sockets can only be used for sending data, while TCP sockets can be used for both sending and receiving data.

5. Which of the following is a disadvantage of using TCP?

(A) It is slower than UDP.

(B) It requires more overhead than UDP.

(C) It can block applications if the network is congested.

(D) It is not suitable for real-time applications.

Section 2:

Topic 1: Network Topologies

1. Fill in the blank: A _____ topology connects all nodes in a network to a central hub.

Topic 2: Network Protocols

2. Fill in the blank: The _____ protocol is responsible for routing packets across a network.

Topic 3: Network Security

3. Fill in the blank: A _____ is a malicious program that can spread through a network and

damage or steal data.

Topic 4: Wireless Networks

4. Fill in the blank: The _____ band is used for short-range wireless communication, such as Wi-Fi.

Topic 5: Cloud Computing

5. Fill in the blank: _____ is a cloud computing service that provides storage and retrieval of data over the internet.