CSE320 Assignment 1
Summer 2025

Q1. Match the following to one or more layers of the TCP/IP protocol suite:

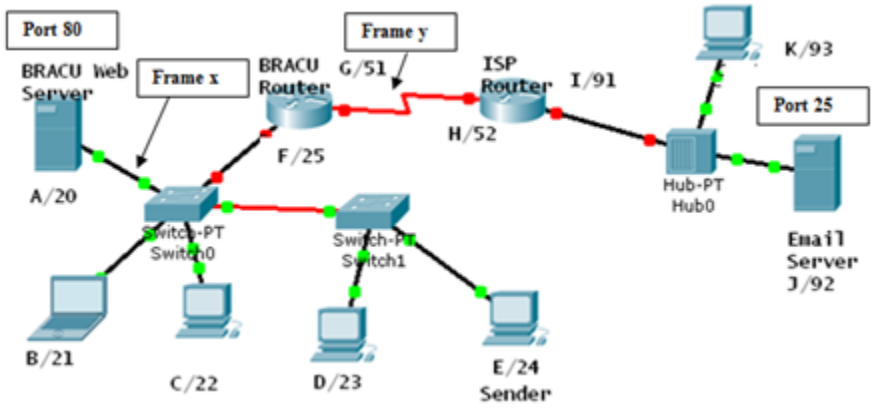
A. Encryption and Decryption
B. Cookies management
C. Data fragmentation and reassembly
D. Data translation
E. Hop to hop communication
F. Route Discover

Q2. For n devices in a network, what is the number of cable links required for a mesh, ring, bus, and star topology ? Show the calculation.

Q2.1 If we use simplex communication mode
Q2.2 If we use full-duplex communication mode

Q3. What is the difference between Reliability and Security? Can communication be secured but less reliable?

Q4. Complete the frames (x & y) given below with appropriate port, IP and MAC addresses. The sender Host E has two applications running; one for email with port number 49254 and the other for accessing the web server with port number 52167. The frame x is intended for the BRACU Web server and frame y is coming from the Email Server. (MAC addresses are alphabets and IP addresses are numbers)



Frame X

D. Mac	S. MAC	D. IP	S. IP	D. Port	S. Port

Frame Y

D. Mac	S. MAC	D. IP	S. IP	D. Port	S. Port

Q5. Suppose we want to design a network system for BRACU. There are 5 main academic buildings which need to be connected in such a way that the network is never down. 4 labs are connected with each academic building using hubs. There are 30 computers in each lab. The computers in a lab are connected in such a way that the cabling-cost is minimized but no single point of failure. Now design a hybrid topology that fulfills all the requirements. Calculate the total links required for the network systems. Calculate total cost using the table below:

Topology	Cost Per Link (tk)
Mesh	25
Star	100
Bus	70
Ring	60