Hadassah Academic College
Department of Computer Science

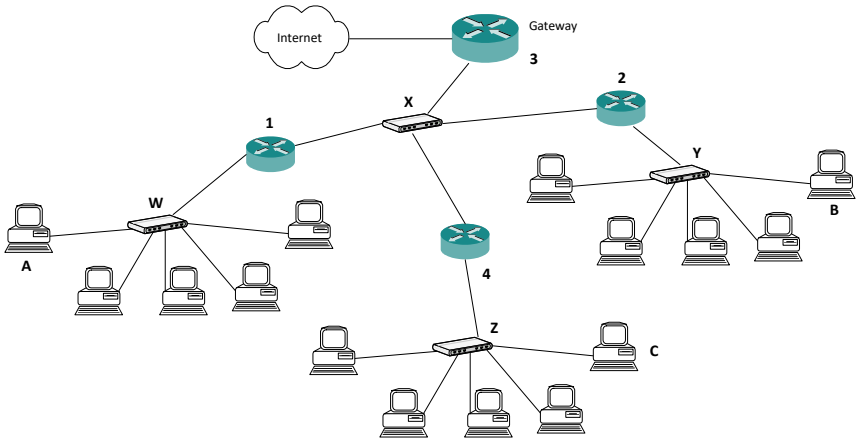
Protocols and Computer Networks Exercise 2

1. A client and server exchange TCP segments of 1000 bytes in each transmission. The segments may arrive out of order. Arrange the following segments in the correct order of transmission:

	Source Port	Destination Port	SEQ	ACK
	1116	25	12341011	67890001
	25	1116	67892001	12344011
	25	1116	67891001	12343011
	1116	25	12343011	67892001
	1116	25	12342011	67891001
	1116	25	12345011	67894001
	25	1116	67890001	12342011
	25	1116	67893001	12345011
	1116	25	12344011	67893001
	25	1116	67894001	12346011

2. Characterize each of the following typical communication tasks as connectionless or connection-oriented:
   a. Sending a standard letter by the post office
   b. Taking a special make-up exam with prior written approval of the department
   c. Communicating with customer service in online chat from a company website
   d. A teacher posts an announcement to the class on the course website (not Moodle)

3. The following is an autonomous network (AS) in which each Ethernet segment includes an IP router:



An additional Ethernet segment connects the routers. Each router has two Ethernet interfaces, and so has two MAC addresses.

Relevant addresses:

Node	MAC		Network
A	ab:cd:ef:11:22:33		10.1.1.18
B	ab:cd:ef:44:55:66		10.2.0.45
1	To W	ab:cd:ef:99:88:77	10.1.0.1
	To X	ab:cd:ef:88:77:99	
2	To Y	ab:cd:ef:aa:bb:cc	10.2.0.1
	To X	ab:cd:ef:bb:cc:aa	

Station A sends a packet to station B. List the addresses that will appear in the MAC headers and IP headers in each hop of the transmission from source to destination.