EAST WEST UNIVERSITY
Department of Computer Science and Engineering
B.Sc. in Computer Science and Engineering Program
Mid Term 2 Examination, Fall 2021 Semester

Course: CSE 405 (Computer Networks)
Instructor: Dr. Anisur Rahman, Associate Professor, CSE Department
Full Marks: 30
Time: 50min (to write) + 10 min (to upload) = 60 min

Note: There are Five questions, answer ALL of them. Course Outcome (CO), Cognitive Level and Mark of each question are mentioned at the right margin.

1. **Solve** the followings for the given network IP if 9 bits are taken to create subnets. Consider the following IP for all parts of the question. Please show the procedure. [CO2,C3, Mark: 6]

"19.0.0.0"

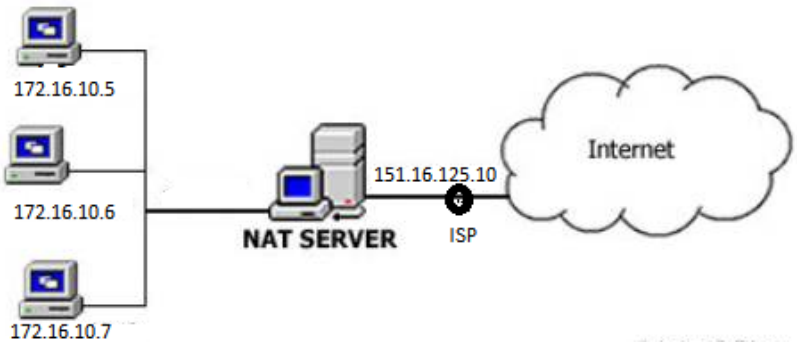
a) Subnet Mask in CIDR notation
b) Why first and last numbers can't be used for subnet for the given IP? State your answer with examples for this specific IP.
c) 1st and last host of the 11th subnet

2. **Solve** the followings considering the following IP for all parts of the question. Please show the procedure. [CO2,C3, Mark: 6]

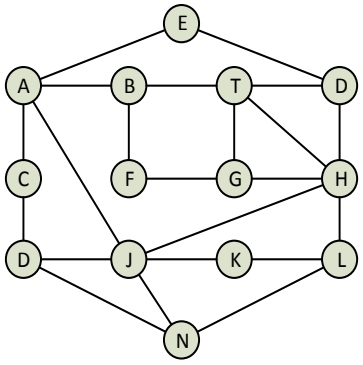
"112.140.132.173/22"

a) Number of usable subnets possible within the network
b) 1st and Last subnets broadcast IP
c) Last host IP of the 9th subnet

3. **Analyze** how a distant server gives reply to individual hosts that hold private IPs. State your answer for the following scenario where hosts 172.16.10.5 and 172.16.10.7 communicated at the same time with the Web server (IP: 156.147.26.84) that is situated in a distant networks (not shown in the diagram). [CO2,C3, Mark: 6]



4. Following is a subnet and the routing tables that router '**T**' has from its neighbors B, D, G and H. The routers in the subnet follow distance vector routing algorithm. **Find** which path '**T**' is going to take to reach '**N**' if it computes the values to reach its neighbors (B, D, G and H) 10, 19, 16 and 18 msec respectively in that moment. [CO2,C2, Mark: 6]



To	B	D	G	H
A	0	23	14	4
B	26	17	12	15
C	24	9	18	16
D	1	5	5	17
E	2	15	4	29
F	8	17	6	32
G	15	36	6	35
H	9	12	0	7
I	8	0	17	12
J	25	9	31	13
K	27	14	11	0
L	12	5	8	9
M	14	6	21	6
N	8	9	15	11

5. **Find** the IP of the subnet the host 112.163.135.250 belongs to if its main router's one of the interfaces' address is 112.130.100.254/20. How many subnets are possible with the present addressing scheme and total number of hosts in the network considering subnets? Please show the calculation. [CO2,C3, Mark: 6]