



## 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

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

“198.0.0.0”

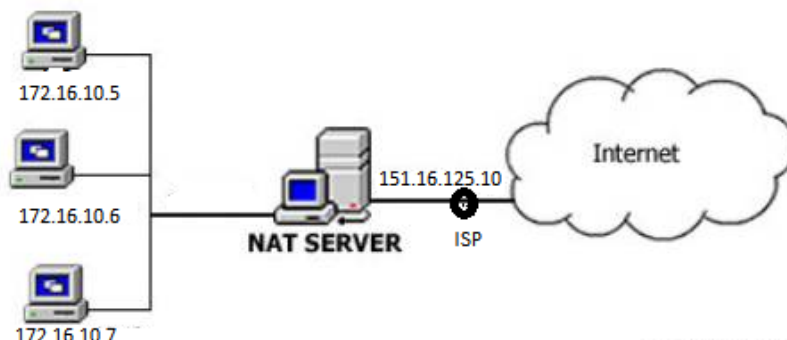
- a) Subnet Mask in decimal notation
- b) Broadcast address of the 10<sup>th</sup> subnet
- c) 1<sup>st</sup> and last host of the 5<sup>th</sup> subnet

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

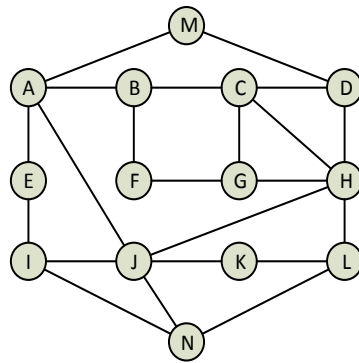
“112.140.132.173/20”

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

3. **Analyze** how NAT keeps track of the packets that are generated from 172.16.10.5 and 172.16.10.7 hosts of the following network when hosts communicate with the same [CO2,C3, Mark: 6]  
Web server (IP: 156.147.26.84) that is situated in a distant networks (not shown in the diagram).



4. Following is a subnet and the routing tables that router 'C' has from its neighbors B, D, G and H. The routers in the subnet follows distance vector routing algorithm. **Find** which path 'C' is going to take to reach 'J' 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** in which subnet (IP), the host 142.163.135.250 belongs to if its main router's address is 142.163.200.254/22. How many subnets are possible with the present addressing scheme and total number of hosts in 142.163.0.0 network considering subnets? Please show the calculation. [CO2,C3, Mark: 6]

