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

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1. **Solve** the followings for the following IP if 7 bits are taken to create subnets. Consider the following IP for all parts of the question. Please show the procedure. [CO2,C3, Mark: 6]

"57.156.223.185"

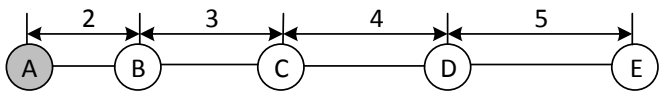
a) Subnet Mask in CIDR notation
b) Broadcast address of the 6th subnet
c) 1st and last host of the 9th subnet

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

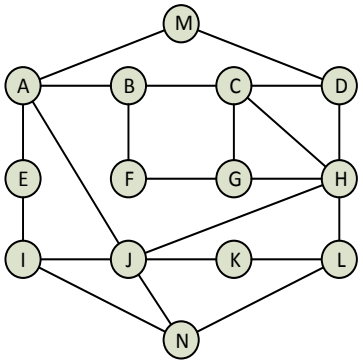
"159.240.232.73/26"

a) Number of usable subnets possible within the network
b) 1st and Last subnets IP
c) Last host IP of the 7th subnet

3. Following is a linear subnet comprises of routers A, B, C, D and E; the internal distances between routers are shown in msec. **Show** the initial state considering router **"A"** is up. **Calculate** 4 more exchanges after router **"A"** gone down and additional 4 more exchanges after **"A"** gone up after the previous 4 exchanges for the following linear subnet. [CO2,C3, Mark: 6]



4. Following is a subnet and the routing tables that router "**J**" has from its neighbors A, I, H, K and N. The routers in the subnet follows distance vector routing algorithm. **Find** which paths "J" is going to take to reach "**M**" if it computes the values to reach its neighbors (A, I, H, K and N) 12, 14, 6, 18 and 16 msec respectively in that moment. [CO2,C2, Mark: 6]



To	A	I	H	K	N
A	0	23	14	4	8
B	26	17	12	15	6
C	24	9	18	16	5
D	1	5	5	17	11
E	2	15	4	29	4
F	8	17	6	32	12
G	15	36	6	35	18
H	9	12	0	7	17
I	8	0	17	12	12
J	25	9	31	13	10
K	27	14	11	0	9
L	12	5	8	9	8
M	14	6	21	6	12
N	8	9	15	11	0

5. **Find** in which subnet (IP), the host 142.163.135.250 belongs to if its main router's address is 142.163.178.254/22. How many subnets are possible with the present addressing scheme and also find the total number of hosts in 142.163.0.0 network considering subnets? Please show the calculation. [CO2,C3, Mark: 6]