Assignment-1 IL 1206

2020BTECH (SE032) Sukumos leddy godda.

Degree of Freedom using kutzbach criterion.

n = number of links

j = number of lower pair (or) Binary (joints)-0100

h = number of higher pairs.

- O If DOF=0 system is in static determinate.
- @ If DOF Z=1 system is in constrained motion.
- 3) If DOF Z=1, system is in indeterminate structure.

1 temasy Joint = 2 Binary Joints 18 2 thick promote

1 quaternary joint = 3 Binary joints.

guestion - (1)

Given

No fixed Joints = 1

1 Binary Joint = 1 Binary, D

4 ternory joints = 8 Binory, A, BE, F

2 quaternary joints = 6 Birrory, G, C

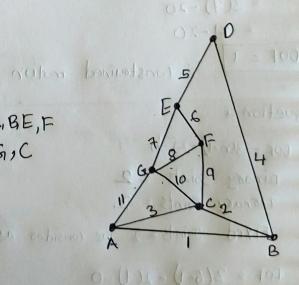
DOF=3(n-1)-25-h

m=11, j=15, h=0

DoF = 30-30

OOF = 0 statio

static releasemente.



Ouestion 2 1- Jasmaris DoF = 3(n-1) -2j-h Binory Joints = D, 1 ternary Joints = 6 = B, A, C, F, E, G quaternary Joints = 0 n=10, J=13 relining of wines DOF = 3C10-1) - 2C13)-Onig (30) XIII) XIII XXIII - 1 27-26 or rumper of higher pairs system is in constrained motion. @ It copyet estern is in constained notion. Question 3 Dof=3(n-1)-25-h Fixed Joints = 4 where we consider as 1, AFGC Bhary Joints = 8, ABCDEFGONIA terrory Joints = 1 into a smooth joints. DOF = 3(8-1) -2(10)-0 = 3(7) - 20- 21-20 Dot = 1 constrained moton 21 CON 10 10 guestion 4 A JUNIOR DOF = 3(n-1)-25-h My youth & strong , and Binary Joints = 2 Ternary Joints = 2 Fixed Joints = 2 we consider as DOF = 3(6-1)-2(7)-0 = 15-4 DOF = 11 -: constrained notion.

As we can observe opposite links have same mechanism.

link 2 is pasallel to link 4

$$=3(4)-2(5)-0$$

DOF= 2 -> for a makes stoudure

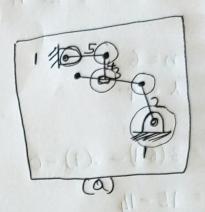
FOX & lines 220 stoucture.

As bemaining also symphical we consides

Total Degree of freedom = 2X(each pair degree of Areadom)

Total Degree of fordom = 4/1

constrained notion



6 (pustion)

legue of keedom 1

Constanta Motion

$$n = 6$$

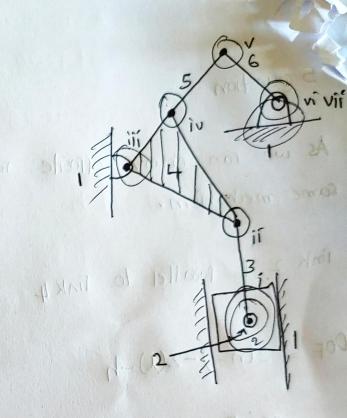
$$\lambda = 7$$

$$= 3(6+1) - 2(7) - 0$$

$$= 15 - 14$$

Degree of freedom = 1

constrained motion



0-(2) 0- (4)8=

the last of landing.

dat segme of rioredoms 2. X Courses tope of rectoral

TXI