

Mechatronics Assignment 2

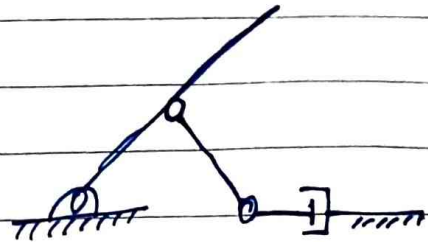
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Q.1) Mechanism 1 - Window closing

$$Dof = \cancel{3(4-1)} \\ = 3(n-1) - 2j$$

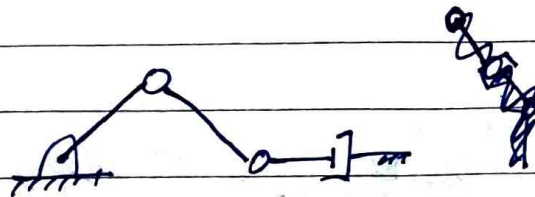
no. of
links

no. of
joints



$$Dof = 3 \times (4-1) - 2 \times 4 = 9 - 8 = \underline{\underline{1}}$$

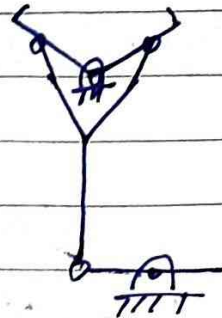
Mechanism 2 - Car piston



$$Dof = 3(4-1) - 2 \times 4 = \underline{\underline{1}}$$

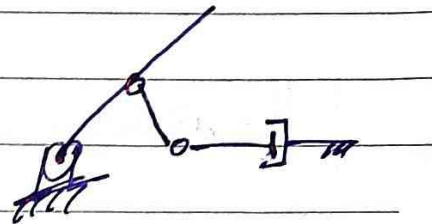
Mechanism 3 - trash litter
picker

$$\begin{aligned} \text{DoF} &= 3 \times 3 - 2 \times 5 \\ &= 2 \end{aligned}$$



Mechanism 4 - Car hood opening

$$\begin{aligned} \text{DoF} &= 3 \times 3 - 2 \times 4 \\ &= 1 \end{aligned}$$



Mechanism 5 - Stapler

$$\begin{aligned} \text{DoF} &= 3 \times 3 - 2 \times 4 \\ &= 1 \end{aligned}$$

