

Ans 1

Factor of Safety :->

$$FOS = \frac{\text{Failure Stress/Load}}{\text{Allowable or working stress}}$$

Allowable stress is the stress value used in design to determine dimensions of component.

FOS depends upon following factors :-

① Effect of failure :-

FOS is taken higher in cases where failure may result in serious accident.

② Type of load :-

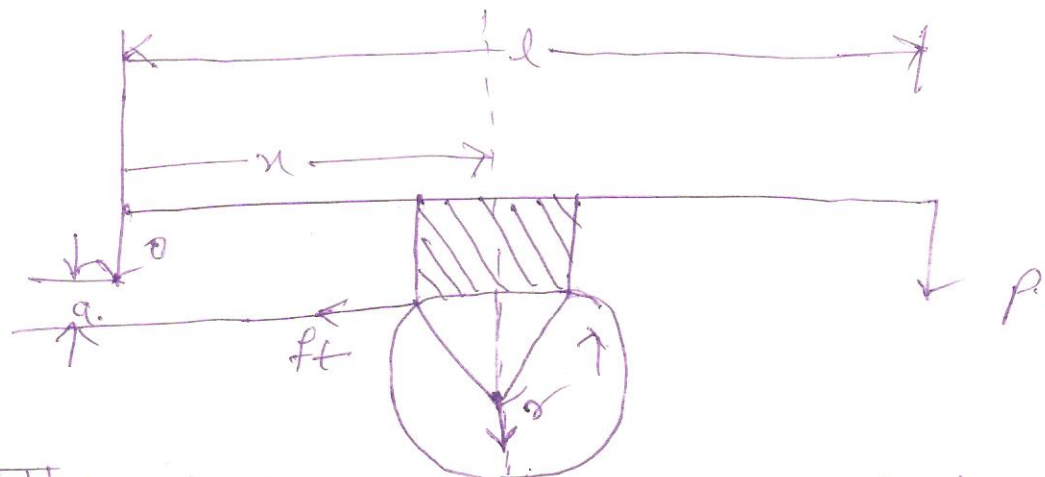
FOS low for static load i.e.  $\frac{dF}{dt} = 0$   
FOS high in input load.

③ Degree of Accuracy in Force Analysis :-

- 4. material of component.
- 5. Reliability " "
- 6. cost " "
- 7. Service conditions
- 8. quality of manufacture.

ANS 2

SELF Energizing Brakes :-



The above case when  $l \cdot a > P \cdot x$  when wheel moving C.C.W.

Take  $l \cdot a > P \cdot x$

$$[R \cdot x = P \cdot l + f \cdot a]$$