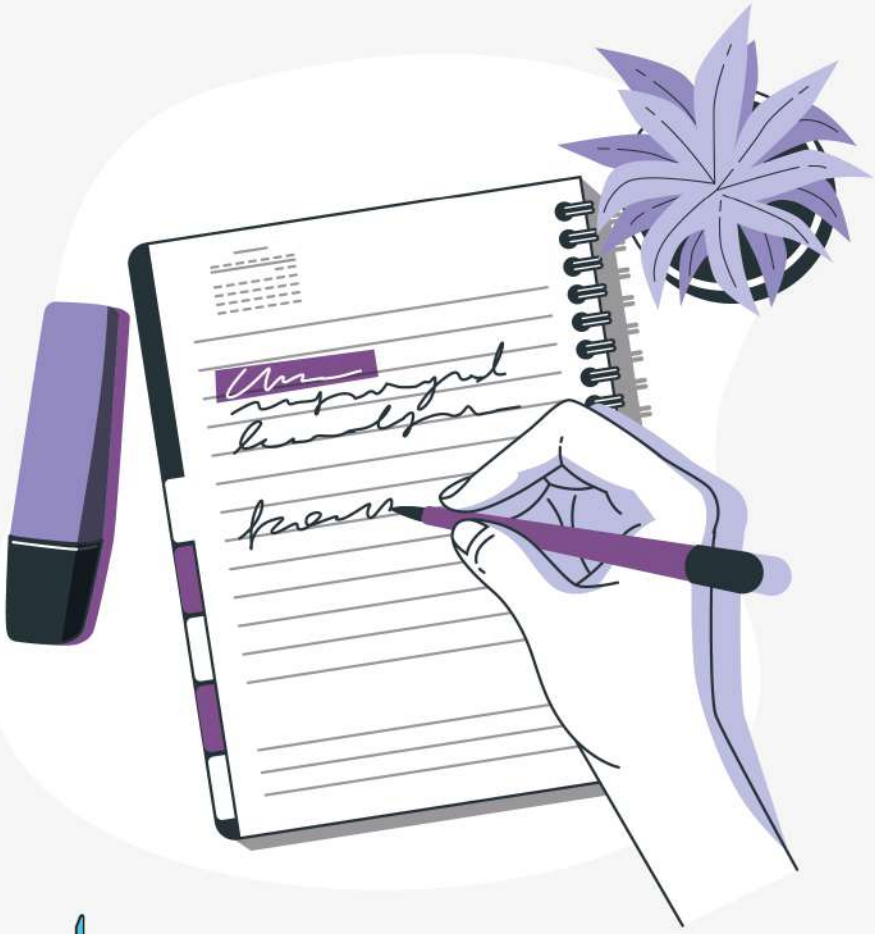
خدمتكم طريق خضناه لرضى الله

2021

ملخص قوانين

الفزياء العامة 101



لجنة السنافر

سنافر البوليتكنك | 0790640139

Physics 1

فيزياء عامة 1

القوانين المطلوبة

Chapter 2

$$\Delta X = X_f - X_i$$

$$\bar{V} = \frac{\Delta X}{\Delta t}$$

$$\bar{S} = \frac{\Sigma X}{\Sigma t} = \frac{\Delta d}{\Delta t}$$

$$\frac{d(X)}{dt} = \frac{dV}{dx} = V$$

$$\bar{a} = \frac{\Delta V}{\Delta t}$$

$$V_f = V_i + at$$

$$V_f^2 = V_i^2 + 2a\Delta X$$

$$\Delta X = V_i t + \frac{1}{2}at^2$$

Chapter 3

$$r = \sqrt{x^2+y^2}$$

$$\theta = \tan^{-1}\left(\frac{\text{الضلع المقابل}}{\text{الكبير}}\right)$$

$$X = r\cos\theta$$

$$y = r\sin\theta$$

$$\frac{\sin\beta}{B} = \frac{\sin\theta}{A}$$

$$C = \sqrt{A^2+B^2-2AB\cos\theta}$$

$$\vec{A}\cdot\vec{B} = |A||B|\cos\theta$$

$$\text{Range} = \frac{V_i^2 \sin 2\theta}{g}$$

$$\text{hight} = \frac{V_i^2 \sin^2\theta}{2g}$$

$$a_c = \frac{V^2}{R}$$

$$V = \frac{2\pi r}{T}$$

$$\omega = \frac{2\pi}{T} = r\omega^2$$

Chapter 5

$$F = Ma$$

$$F_{weight} = Mg$$

$$F_{Friction} = \mu_{Friction} \cdot N$$

Chapter 6

$$F = M\frac{V^2}{r}$$

$$\mu_s = \frac{V^2_{max}}{g \cdot r}$$

$$T_{top} = Mg\left(\frac{V^2_{top}}{Rg} - 1\right)$$

$$T_{bot} = Mg\left(\frac{V^2_{bot}}{R\cdot g} + 1\right)$$

chapter 7

$W = F \Delta r \cos\theta$

$W = \vec{F} \cdot \vec{r}$

$W = \int_{x_i}^{x_f} F\,dx$

$W = \frac{1}{2}kx_f^2 - \frac{1}{2}kx_i^2$

$F_{spring} = -k\Delta x$

$K_{entic\ energy} = \frac{1}{2}MV^2$

$W = \Delta K$

$U = Mgy$

$W = \Delta U$

$U_s = \frac{1}{2}kx^2$

$E_{mech} = K + U$

chapter 8

$\Delta E = E_F - E_i = 0$

$E_F = E_i$

$K_F + U_F = K_i + U_i$

$V_f = \sqrt{2g(\Delta y)}$

$W = \Delta E$

$Power = \frac{W}{\Delta t}$

$W = F \Delta d$

$Power = \frac{F \cdot \Delta d}{\Delta t}$

$power = F \cdot V$

$Power = MaV$ أو

chapter 9

$P = MV$

$P_{before} = P_{after}$

elastic ⇒ $M_1V_1 + M_2V_2 = M_1V_1' + M_2V_2'$

inelastic ⇒ $M_1V_1 + M_2V_2 = (M_1 + M_2)V$

ذكر سريع

$V_{central\ mass} = \frac{(M_1V_1 + M_2V_2)}{(M_1 + M_2)}$

[power] ⇒ watt

watt ⇒ $\frac{J}{S}$

best of wishes