EKSAMENDATABLAD VIR DIE FISIESE WETENSKAPPE (FISIKA)

TABEL 1 FISIESE KONSTANTES

NAAM	SIMBOOL	WAARDE
Versnelling vanweë swaartekrag op Aarde	g	$9{,}8\ \text{m·s}^{-2}$
Spoed van lig in 'n vakuum	c	$3{,}0 \times 10^{8}\ \text{m·s}^{-1}$
Universele gravitasiekonstante	G	$6{,}7 \times 10^{-11}\ \text{N·m}^2\text{·kg}^{-2}$
Coulomb se konstante	k	$9{,}0 \times 10^{9}\ \text{N·m}^2\text{·C}^{-2}$
Grootte van lading op elektron	e	$1{,}6 \times 10^{-19}\ \text{C}$
Massa van 'n elektron	m_e	$9{,}1 \times 10^{-31}\ \text{kg}$
Planck se konstante	h	$6{,}6 \times 10^{-34}\ \text{J·s}$
1 elektronvolt	eV	$1{,}6 \times 10^{-19}\ \text{J}$

TABEL 2 FISIKAFORMULES

BEWEGING

$v = u + at$ **of** $v_f = v_i + a\Delta t$	$s = \left(\frac{v+u}{2}\right)t$ **of** $\Delta x = \left(\frac{v_f+v_i}{2}\right)\Delta t$
$v^2 = u^2 + 2as$ **of** $v_f^2 = v_i^2 + 2a\Delta x$	$s = ut + \frac{1}{2}at^2$ **of** $\Delta x = v_i\Delta t + \frac{1}{2}a(\Delta t)^2$

KRAG EN MOMENTUM

$F_{netto} = ma$	$F_{netto} = \frac{\Delta p}{\Delta t}$ **of** $F_{netto}\Delta t = m\Delta v$	$J = \Delta p = mv - mu$ **of** $J = \Delta p = mv_f - mv_i$
$p = mv$	$F_g = mg$	$F_{fs}^{maks} = \mu_s F_N$ $F_{fk} = \mu_k F_N$

ARBEID, ENERGIE EN DRYWING

$W = Fs$ **of** $W = F\Delta x$ **of** $W = F\Delta x\cos\theta$		$P = \frac{W}{t}$	$P = Fv$
$E_p = mgh$	$E_K = \frac{1}{2}mv^2$	$W_{netto} = \Delta E_K$	% rendement = $\frac{\text{drywing}_{\text{uit}}}{\text{drywing}_{\text{in}}} \times 100$

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GRAVITASIE- EN ELEKTRIESE VELDE

$F = G\frac{m_1 m_2}{r^2}$	$g = \frac{F}{m}$	$g = G\frac{M}{r^2}$
$F = k\frac{q_1 q_2}{r^2}$	$E = \frac{F}{q}$	$E = k\frac{Q}{r^2}$

ELEKTRIESE KRINGE

$I = \frac{q}{t}$	$V = \frac{W}{q}$
$R = \frac{V}{I}$	$emf = I(R_{eks} + r)$ **of** $emf = V_{las} + V_{interne\ weerstand}$
$R_S = R_1 + R_2 + \ldots$	$\frac{1}{R_P} = \frac{1}{R_1} + \frac{1}{R_2} + \ldots$
$P = \frac{W}{t}$ **of** $W = Pt$	
$W = VIt$ **of** $W = I^2Rt$ **of** $W = \frac{V^2}{R}t$	
$P = VI$ **of** $P = I^2R$ **of** $P = \frac{V^2}{R}$	

ELEKTRODINAMIKA

$\Phi = BA\cos\theta$	$emf = -N\frac{\Delta\Phi}{\Delta t}$	$F = IB\ell\sin\theta$
$V_p I_p = V_s I_s$	$\frac{N_s}{N_p} = \frac{V_s}{V_p}$	

FOTONE EN ELEKTRONE

$c = f\lambda$	$E = hf$ **of** $E = \frac{hc}{\lambda}$	
$E = W_0 + E_{K(maks)}$	$W_0 = hf_0$	$E_{K(maks)} = \frac{1}{2}mv_{maks}^2$

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