

FIZIKA 3. RAZRED

MAGNETIZAM		
$B = \mu_0 \mu_r \frac{I}{2\pi r}$ $B = \mu_0 \mu_r \frac{I}{2R}$ $B = \mu_0 \mu_r \frac{NI}{l}$	$F_{12} = \mu_0 \mu_r \frac{I_1 I_2 l}{2\pi d}$ $F_A = IlB \sin(\varphi)$ $F_L = qvB \sin(\varphi)$	$\Phi = BScos(\alpha)$ $F_{cp} = \frac{mv^2}{r}$ GIBANJE ČESTICE PO SPIRALI $R = \frac{mv \sin(\alpha)}{qB}$ $h = \frac{2\pi m v c \cos(\alpha)}{qB}$
ELEKTROMAGNETSKA INDUKCIJA, IZMJENIČNA STRUJA		
$U_i = -N \frac{\Delta \Phi}{\Delta t}$ $U_i = -L \frac{\Delta I}{\Delta t}$ $U_i = -Blv \sin(\alpha)$ $L = \mu_0 \mu_r \frac{N^2 S}{l}$	$U_{ef} = \frac{U_0}{\sqrt{2}} \quad I_{ef} = \frac{I_0}{\sqrt{2}}$ $Z = \sqrt{R^2 + (R_L - R_C)^2}$ $tg\varphi = \frac{R_L - R_C}{R}$	TRANSFORMATORI $P_1 = P_2$ $P = UI$ $\frac{U_1}{U_2} = \frac{N_1}{N_2}$
RADNI OTPOR $u = U_0 \sin(\omega t)$ $i = I_0 \sin(\omega t)$ $i = \frac{u}{R}$	INDUKTIVNI OTPOR $u = U_0 \sin(\omega t)$ $i = I_0 \sin\left(\omega t - \frac{\pi}{2}\right)$ $R_L = L\omega$	KAPACITIVNI OTPOR $u = U_0 \sin(\omega t)$ $i = I_0 \sin\left(\omega t + \frac{\pi}{2}\right)$ $R_C = \frac{1}{C\omega}$
TITRANJE		
$\vec{F}_{el} = -k\vec{y}$ $F_{el} = ky$ $E_{ep} = \frac{1}{2}ky^2$	$y = y_0 \sin(\omega t + \varphi_0)$ $v = v_0 \cos(\omega t + \varphi_0)$ $a = -a_0 \sin(\omega t + \varphi_0)$	$v_0 = y_0 \omega$ $a_0 = y_0 \omega^2$ $\omega = 2\pi f = \frac{2\pi}{T}$
$T = 2\pi \sqrt{\frac{m}{k}}$	$T = 2\pi \sqrt{\frac{l}{g}}$	$T = 2\pi \sqrt{LC}$

VALOVI		
$y = y_0 \sin(\omega t - kx + \varphi_0)$ $v = v_0 \cos(\omega t - kx + \varphi_0)$ $a = -a_0 \sin(\omega t - kx + \varphi_0)$	$k = \frac{2\pi}{\lambda}$ $\lambda = v \cdot T = \frac{v}{f}$	$\frac{\Delta\Phi}{2\pi} = \frac{\Delta x}{\lambda}$ $\frac{\sin\alpha}{\sin\beta} = \frac{v_1}{v_2} = \frac{\lambda_1}{\lambda_2}$
ČVRSTA TIJELA	TEKUĆINE	PLINOVI
$v = \sqrt{\frac{F}{\mu}} \quad v = \sqrt{\frac{E}{\rho}}$	$v = \sqrt{\frac{K}{\rho}}$	$v = \sqrt{\frac{\kappa p}{\rho}} = \sqrt{\frac{\kappa RT}{M}}$
KONSTRUKTIVNA INTERFERENCIJA $\Delta r = k\lambda; k = 0,1,2, \dots$ DESTRUKTIVNA INTERFERENCIJA $\Delta r = (2k - 1)\frac{\lambda}{2}; k = 1,2,3, \dots$ STOJNI VALOVI $y = y_0 \sin \frac{2\pi}{\lambda} x \cdot \cos \frac{2\pi}{T} t$	$I = \frac{P}{A}$ $L = 10 \log \frac{I}{I_0}$ POVRŠINA KUGLE $P = 4r^2\pi$	$f_p = f_i \frac{v_z \pm v_p}{v_z \mp v_i}$ $v = v_0 \sqrt{1 + \frac{t}{273,15}}$ $v_0 = 331 \text{ m/s}$
GEOMETRIJSKA OPTIKA		
$v = \frac{c}{n}$ $n_1 \sin(\alpha) = n_2 \sin(\beta)$	$\frac{1}{f} = \frac{1}{a} + \frac{1}{b}$ $m = \frac{y'}{y} = -\frac{b}{a} \quad j = \frac{1}{f}$	KONVERGENTNA LEĆA: $f > 0$ DIVERGENTNA LEĆA: $f < 0$ REALNA SLIKA: $b > 0$ VIRTUALNA SLIKA: $b < 0$
KONSTANTE		
$\mu_0 = 4\pi \cdot 10^{-7} \frac{Tm}{A}$ $\epsilon_0 = 8,85 \cdot 10^{-12} \frac{C^2}{Nm^2}$ $c = 3 \cdot 10^8 \text{ m/s}$	$R = 8,314 \text{ JK}^{-1} \text{ mol}^{-1}$ $N_A = 6,022 \cdot 10^{23} \text{ mol}^{-1}$ $k_B = 1,38 \cdot 10^{-23} \text{ JK}^{-1}$ $I_0 = 10^{-12} \frac{W}{m^2}$	$m_p = 1,673 \cdot 10^{-27} \text{ kg}$ $m_n = 1,675 \cdot 10^{-27} \text{ kg}$ $m_e = 9,11 \cdot 10^{-31} \text{ kg}$ $e = 1,6 \cdot 10^{-19} \text{ C}$
1. I 2. RAZRED		
$v = v_0 + at$ $s = v_0 t + \frac{1}{2} at^2$ $v^2 = v_0^2 + 2as$ $F_R = ma$ $F_{cp} = \frac{mv^2}{r}$	$W = \Delta E$ $E_{gp} = mgh$ $E_k = \frac{1}{2} mv^2$ $P = \frac{W}{t}$ $p = mv \quad I = F\Delta t$	$p = \frac{F}{A} \quad p_h = \rho gh$ $F_u = \rho V' g$ $Q = mc\Delta T$ $pV = nRT$ $n = \frac{N}{N_A} = \frac{m}{M}$