

**ΣΤΟΙΧΕΙΑ ΜΗΧΑΝΩΝ
ΜΑΘΗΜΑ ΕΙΔΙΚΟΤΗΤΑΣ ΕΠΑ.Λ.****ΑΠΑΝΤΗΣΕΙΣ****ΘΕΜΑ Α****A1.** 1) ε 2) γ 3) α 4) στ 5) δ**A2.**

α. Σ

β. Λ

γ. Λ

δ. Σ

ε. Σ

ΘΕΜΑ Β**B1.**

α. χυτοσίδηροι, χάλυβες

β. κεραμικά, ρητίνες (συνθετικές), πλαστικά

B2.

Θεωρία σελ. 133,134,136,137

ΘΕΜΑ Γ

$$\Gamma 1. p = \frac{F}{\frac{\pi}{4}(d^2 - d_1^2) \cdot z} \Rightarrow z = \frac{F}{\frac{\pi}{4}(d^2 - d_1^2) \cdot p} = \frac{4 \cdot 6280}{3,14 \cdot (3^2 - 2^2) \cdot 200} \Rightarrow z = 8$$

$$\Gamma 2. b_1 = 1,1 \cdot b + 10mm \Rightarrow 120 = 1,1b + 10 \Rightarrow b = 100mm \Rightarrow b = 10cm$$

$$\sigma_{\varepsilon\pi} = \frac{F}{b \cdot s} \Rightarrow s = \frac{F}{b \cdot \sigma_{\varepsilon\pi}} = \frac{500}{10 \cdot 100} \Rightarrow s = 5mm$$

ΘΕΜΑ Δ**Δ1.**

$$\alpha. \tau_{\varepsilon\pi} = \frac{\tau_{\theta\rho}}{v} = \frac{2000}{2} \Rightarrow \tau_{\varepsilon\pi} = 1000daN / cm^2$$

$$\beta. \tau_{\varepsilon\pi} = \frac{Q}{m \cdot z \cdot A} \Rightarrow A = \frac{Q}{m \cdot z \cdot \tau_{\varepsilon\pi}} = \frac{25120}{2 \cdot 4 \cdot 1000} \Rightarrow A = 3.14cm^2$$

$$A = \frac{\pi d^2}{4} \Rightarrow d = \sqrt{\frac{4A}{\pi}} = \sqrt{4} \Rightarrow d = 2cm = 20mm$$

$$\gamma. d_1 = d + 1\text{mm} = 21\text{mm} \Rightarrow d_1 = 2.1\text{cm}$$

Δ2.

$$\alpha. \eta = \frac{P_2}{P_1} \Rightarrow P_2 = \eta \cdot P_1 = 0.9 \cdot 30 \Rightarrow P_2 = 27\text{PS}$$

$$M_2 = 71620 \frac{P_2}{n_2} \Rightarrow n_2 = 71620 \frac{P_2}{M_2} = 71620 \frac{27}{7162} \Rightarrow n_2 = 270\text{rpm}$$

$$\beta. i = \frac{n_2}{n_1} = \frac{270}{810} \Rightarrow i = \frac{1}{3}$$

$$i = \frac{z_1}{z_2} \Rightarrow z_2 = \frac{z_1}{i} = 3 \cdot 25 \Rightarrow z_2 = 75 \text{δόντια}$$

$$\gamma. a = \frac{d_1 + d_2}{2} = \frac{m \cdot z_1 + m \cdot z_2}{2} = m \frac{z_1 + z_2}{2} \Rightarrow a = 3 \cdot \frac{25 + 75}{2} \Rightarrow a = 150\text{mm}$$