

Fizika na ljetnom roku državne mature 2014.

Ključ za odgovore - ispitna knjižica 1

1. D.	7. A.	13. B.	19. D.
2. C.	8. B.	14. C.	20. D.
3. D.	9. B.	15. A.	21. B.
4. B.	10. D.	16. C.	22. A.
5. B.	11. D.	17. D.	23. C.
6. A.	12. D.	18. C.	24. C.

Ključ za odgovore - ispitna knjižica 2

25.

Impuls sile iznosi  $F\Delta t/2$  **1 bod**

Impuls sile iznosi 5 N s **1 bod**

26.

$$v^2 = v_0^2 \pm 2as \quad \mathbf{1 \text{ bod}}$$

$$a = \pm(v_0^2 - v^2)/(2s) \quad \mathbf{1 \text{ bod}}$$

$$a = \pm 3 \text{ m/s}^2 \quad \mathbf{1 \text{ bod}}$$

27.

$$E_k = 3kT/2 \quad \mathbf{1 \text{ bod}}$$

$$T = 2E_k/(3k)$$

$$T = 2 \cdot 6 \cdot 10^{-20} \text{ J} / (3 \cdot 1,38 \cdot 10^{-23} \text{ J K}^{-1})$$

$$T = 2898,6 \text{ K} \text{ (2900 K)} \quad \mathbf{1 \text{ bod}}$$

28.

$$F = Q_1 Q_2 / (4\pi\epsilon_0 r^2) \quad \mathbf{1 \text{ bod}}$$

$$Q_1 \cdot 2Q_2 / (4\pi\epsilon_0 r_2^2) = Q_1 \cdot Q_2 / (4\pi\epsilon_0 r_1^2)$$

$$2/r_2^2 = 1/r_1^2$$

$$r_2 = r_1 \sqrt{2} \quad \mathbf{1 \text{ bod}}$$

$$r_2 = 14,1 \text{ cm}$$

**29.**

$$d \sin \alpha = k \lambda \quad \mathbf{1 \text{ bod}}$$

$$d = k \lambda / \sin \alpha$$

$$d = 5 \cdot 10^{-6} \text{ m} \quad \mathbf{1 \text{ bod}}$$

**30.**

$$E_2 - E_1 = h f \quad \mathbf{1 \text{ bod}}$$

$$f = (E_2 - E_1) / h = 2,5 \cdot 10^{15} \text{ Hz} \quad \mathbf{1 \text{ bod}}$$

**31.**

$$F = F_G - F_c \quad \mathbf{1 \text{ bod}}$$

$$F_G = m g \quad \mathbf{1 \text{ bod}}$$

$$F_c = m v^2 / r \quad \mathbf{1 \text{ bod}}$$

$$F = 5000 \text{ N} \quad \mathbf{1 \text{ bod}}$$

**32.**

$$T_2 / V_2 = T_1 / V_1 \quad \mathbf{1 \text{ bod}}$$

$$V_1 = V_2 - \Delta V \quad \mathbf{1 \text{ bod}}$$

$$\Delta V = W / p \quad \mathbf{1 \text{ bod}}$$

$$T_2 = 270 \text{ K} = - 3 \text{ }^\circ\text{C} \quad \mathbf{1 \text{ bod}}$$

**33.**

$$m = \gamma V \quad \mathbf{1 \text{ bod}}$$

$$V = L S \quad \mathbf{1 \text{ bod}}$$

$$R = \rho L / S \quad \mathbf{1 \text{ bod}}$$

$$m = 151 \text{ kg} \quad \mathbf{1 \text{ bod}}$$

**34.**

$$E_k = \frac{mv^2}{2} \quad \mathbf{1 \text{ bod}}$$

$$E_p = \frac{kx^2}{2} \quad \mathbf{1 \text{ bod}}$$

$$\frac{mv^2}{2} = \frac{1}{2}kA^2 - \frac{1}{2}kx^2 \quad \mathbf{1 \text{ bod}}$$

$$v = 1,73 \text{ m/s} \quad \mathbf{1 \text{ bod}}$$

**35.**

$$P = \sigma ST^4 \quad \mathbf{1 \text{ bod}}$$

$$P = E/t \quad \mathbf{1 \text{ bod}}$$

$$S = d^2\pi/4 = 0,1^2 \text{ m}^2\pi/4 \quad \mathbf{1 \text{ bod}}$$

$$T = \sqrt[4]{\frac{4E}{\sigma d^2\pi t}}$$

$$T = 688 \text{ K} \quad \mathbf{1 \text{ bod}}$$