

KLJUČ ZA ODGOVORE

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

25. (2 boda) $m_1 v_1 + m_2 v_2 = m_1 v_1' - m_2 v_2'$ 1 bod
 $0.6 \text{ kg m s}^{-1} = 0.5 v_1' - 0.15 \text{ kg m s}^{-1}$
 $v_1' = 1.5 \text{ m/s}$ 1 bod
26. (2 boda) $mv^2/2 = kx^2/2$ 1 bod
 $v = 17.7 \text{ m/s}$ 1 bod
27. (2 boda) $U = \frac{3}{2} NkT$ 1 bod
 $U = 414 \text{ J}$ 1 bod
28. (2 boda) $Q = I_1 \Delta t_1 + I_2 \Delta t_2$ 1 bod
 $Q = 0.5 \text{ C} + 4 \text{ C} = 4.5 \text{ C}$ 1 bod
29. (2 boda) $E = mv_0^2/2$ 1 bod
 $E = 40.5 \text{ J}$ 1 bod
30. (2 boda) $I = I_0 \sqrt{1 - \frac{v^2}{c^2}}$ 1 bod
 $v = \frac{\sqrt{8}}{3} c = 0.94 c = 2.8 \cdot 10^8 \text{ m/s}$ 1 bod
31. (4 boda) $F_{\text{ukupno}} = F_{\text{žičare}} - F_{\text{tr}} - mg \sin 30^\circ$ 1 bod
 $F_{\text{tr}} = \mu mg \cos 30^\circ$ 1 bod
 $F_{\text{ukupno}} = 0$ 1 bod
 $F_{\text{žičare}} = 413.9 \text{ N}$ 1 bod

32. (4 boda) $\Delta U = Q - |W|$ 1 bod
- $W = p \Delta V$ 1 bod
- $\Delta V = 4 \text{ dm}^3 = 0.004 \text{ m}^3$ 1 bod
- $\Delta U = 4000 \text{ J}$ 1 bod
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33. (4 boda) u kratkom spoju $I = \varepsilon/r$ 1 bod
- $r = 0.8 \Omega$ 1 bod
- $\varepsilon = I (R + r)$ 1 bod
- $I = 4.17 \text{ A}$ 1 bod
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34. (4 boda) $d \sin \alpha = k \lambda$ 1 bod
- $k_{\max} \leq d/\lambda$ 1 bod
- $k_{\max} = 6$ 1 bod
- broj maksimuma = $2 \cdot 6 + 1 = 13$ 1 bod
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35. (4 boda) $E = Pt$ 1 bod
- $E = \Delta m c^2$ 1 bod
- $\Delta m = 0.01 \cdot 2 \cdot 10^{30} \text{ kg} = 2 \cdot 10^{28} \text{ kg}$ 1 bod
- $t = \Delta m c^2 / P = 4.74 \cdot 10^{18} \text{ s}$ 1 bod