

PEMBAHASAN SELEKSI NASIONAL MASUK PERGURUAN TINGGI NEGERI (SNMPTN)

Mata Pelajaran : Fisika
 Tanggal : 13 Juni 2012
 Kode Soal : 333

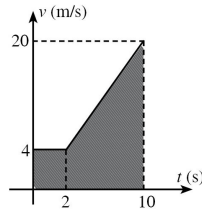
16. Jawab: E

Mekanika (Kinematika) $s = \text{luas daerah}$

$$s = 2(4) + \frac{1}{2}(4 + 20) \cdot 8$$

$$s = 8 + 24(4)$$

$$s = 8 + 96 = 104 \text{ m}$$



17. Jawab: E

Elastisitas

$$F = k \cdot \Delta x$$

$$\Delta x = \frac{F}{k} = \frac{10}{50} = 0,2 \text{ m}$$

$$\text{Oleh dua gaya } \Delta x_{\text{tot}} = 2(0,2) = 0,4 \text{ m}$$

18. Jawab: D

Zat dan Kalor

Wujud zat tetap, karena tidak ada kalor yang dilepas maupun kalor yang diterima (suhu seimbang 0°C)

19. Jawab: D

Gaya Magnet

$$R = \frac{mV}{qB} = \frac{1}{2}d \rightarrow d = \frac{2mV}{qB}$$

$$d' = \frac{2mV}{q(3B)} = \frac{1}{3} \left(\frac{2mV}{qB} \right) = \frac{1}{3}d$$

20. Jawab: B

Listrik Statis

$$I = \frac{Q}{t} \rightarrow Q = I \cdot t = (10^{-2})(10) = 10^{-1} \text{ C}$$

$$Q = C \cdot V \rightarrow V = \frac{Q}{C} = \frac{10^{-1}}{2 \cdot 10^{-1}} = 0,5 \text{ volt} = 500 \text{ mV}$$

21. Jawab: A

Optik Fisis

Cahaya yang merambat dari medium renggang ke rapat, sinar yang terpantul akan mengalami pembalikan fase 180° dibandingkan sinar datangnya

22. Jawab: E

Gelombang

$$T = 4 \text{ s}$$

$$\lambda = 16 \text{ cm (fase sama berurutan)}$$

$$v = \frac{\lambda}{T} = \frac{16}{4} = 4 \text{ cm/s}$$

23. Jawab: B

Gas Ideal

$$n = 2 \text{ mol}$$

$$V_1 = 0,03 \text{ m}^3$$

$$V_2 = 0,07 \text{ m}^3$$

$$\frac{P_1 V_1}{T_1} = \frac{P_2 V_2}{T_2} \quad (\text{volum tetap})$$

$$\frac{T_1}{T_2} = \frac{V_1}{V_2} = \frac{0,03}{0,07} = \frac{3}{7}$$

24. Jawab: A

Dualisme gelombang – materi

$$E_k = E_{\text{foton}} - W$$

$$E_k = 4,43 - 2,28$$

$$E_k = 2,15 \text{ eV}$$

25. Jawab: C

Relativitas

$$\Delta t = \frac{\Delta t_o}{\sqrt{1 - \frac{v^2}{c^2}}}$$

$$\Delta t = \frac{12}{\sqrt{1 - (0,8)^2}}$$

$$\Delta t = \frac{12}{0,6} = 20 \text{ menit}$$

26. **Jawab: A**

Fluida Statis

$$F_a = \Delta W$$

$$\rho_f \cdot g \cdot V_b = \Delta W$$

$$V_b = \frac{m_b}{\rho_b}$$

27. **Jawab: D**

Listrik Dinamis

Arah arus berlawanan dengan arah gerak elektron.

Arah arus dalam penghantar dari potensial tinggi ke rendah.

28. **Jawab: C**

Gelombang Stasioner

$$y = 10 \sin(0,2\pi x) \cos(80\pi t) \text{ cm}$$

(1) amplitudo superposisi (A_s) tidak tergantung waktu tapi positif

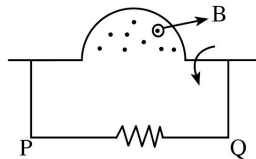
(2) $A_{s(\max)} = 10 \text{ cm}$ (perut)

(3) tidak tergantung waktu

(4) $80\pi = 2\pi f \rightarrow f = 40 \text{ Hz}$

29. **Jawab: B**

Induksi Elektromagnetik



(1) Betul, arah medan mempengaruhi arah arus (Lenz)

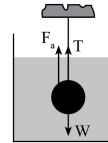
(2) Salah, timbul arus dalam rangkaian

(3) Betul, timbul arus bolak-balik

(4) Salah, fluks magnet berubah

30. **Jawab: A**
Dinamika

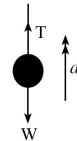
(1)



$$F_a + T = W$$

$$T = W - F_a$$

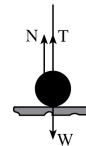
(2)



$$T - W = m \cdot a$$

$$T = W + m \cdot a$$

(3)



$$N + T = W$$

$$T = W - N$$

(4)



$$T = W$$