

FISIKA PAKET B  
PEMBAHASAN SOAL

1.. Soal no 1

Diketahui:

Su: 1,0

Sn: 0,01

Maka skala seluruhnya adalah  $1,0 + 0,01 = 1,01$  cm (karena satuan pada obsen adalah mm maka dirubah ke mm)

$$1,01 * 10 = 10,10 \text{ mm} \text{ Jawabannya (C)}$$

2. Soal no 2

Diketahui:

$F_1 = 11 \text{ N}$  ;  $F_2 = 10 \text{ N}$  ;  $F_3 = 11\sqrt{3}$  ; sudut yang terbentuk antara  $F_2$  dan garis x adalah  $60^\circ$

Ditanya:

Besar resultan ketiga gaya vektor gaya?

Jawab:

$$\begin{aligned} - F_{2x} &= F \sin\theta & - F_{2y} &= F \cos\theta \\ &= 10 \cdot \sin 60 & &= 10 \cdot \cos 60 \\ &= 10 \cdot \frac{1}{2}\sqrt{3} = 5\sqrt{3} \text{ N} & &= 5 \text{ N} \end{aligned}$$

$$\begin{aligned} \sum F_x &= 11\sqrt{3} - 5\sqrt{3} & \sum F_y &= 11 - 5 \\ &= 6\sqrt{3} \text{ N} & &= 6 \text{ N} \end{aligned}$$

$$\begin{aligned} F_r &= \sqrt{(\sum F_x)^2 + (\sum F_y)^2} \\ &= \sqrt{(6\sqrt{3})^2 + (6)^2} \\ &= \sqrt{144} \\ &= 12 \text{ N} \text{ Jawabannya (D)} \end{aligned}$$

3. Diketahui:

$V_0 = 5 \text{ m/s}$  ,  $t = 9 \text{ s}$  ,  $v = 7 \text{ m/s}$

Ditanya

S = ... ?

Jawab

$$V = V_0 + a \cdot t$$

$$a = \frac{V - V_0}{t} = \frac{7 - 5}{9} = \frac{2}{9} \text{ m/s}^2$$

$$V^2 = V_0^2 + 2 \cdot a \cdot S$$

$$S = \frac{V^2 - V_0^2}{2a} = \frac{7^2 - 5^2}{2 \cdot \frac{2}{9}} = \frac{49 - 25}{\frac{4}{9}} = 54 \text{ m/s} \text{ jawab (E)}$$

4. Soal no 4

Dik :  $v_0 = 600 \text{ m/s}$  ,  $\theta = 53^\circ$  ,  $t = 21 \text{ s}$

Dit : v saat  $t = 21 \text{ s}$  ?

Jawab :

$$\begin{aligned}
v_x &= v_0 \cos \theta & v_y &= v_0 \sin \theta - gt & v &= \sqrt{v_x^2 + v_y^2} \\
&= 600 \times 0,6 & &= 600 \times 0,8 - 10 \times 21 & &= \sqrt{4^2 + 3^2} \\
&= 360 & &= 480 - 210 & &= 5 \times 90 \\
&= 90 \times 4 \text{ m/s} & &= 270 & &= 450 \text{ m/s} \\
&& &= 90 \times 3 \text{ m/s} & & \text{Jawabanya (B)}
\end{aligned}$$

5. Dik: wa: 8 , Ra: 5 ,Rb: 4, Rc : 30 , Rd: 20

Dit: wd?

Jawab:

$$W_a.R_a = W_b.R_b$$

$$8 \cdot 5 = W_b \cdot 4$$

$$W_b = 10 = w_c$$

$$W_c.R_c = W_d.R_d$$

$$10 \cdot 30 = W_d \cdot 20$$

$$W_d = 300/20 = 15 \text{ rad/s} \quad \text{Jawabannya(A)}$$

6. karena pasangan gaya aksi dan reaksi harus memenuhi syarat2 berikut :

1.  $\sum f = 0$

2. arahnya berlawanan

3. bekerja pada 2 benda, dalam hal ini benda B dan lantai

Sehingga jawabannya (D)

7. Diketahui:

$$m = 2,5 \text{ kg}, \mu_s = 0,3, \mu_k = 0,1, g = 10 \text{ m/s}^2$$

Ditanya: F = ... ?

Jawab

$$F = w \sin \theta + f_{s_{\max}}$$

$$= 15 + 6$$

$$= 21 \text{ N} \quad \text{Jawabannya (C)}$$

8.  $\sum \sigma_B = -30 \cdot 4 \cdot \sin 3 + 10 \cdot 4 \cdot \sin 90 - 10 \cdot 2 \cdot \sin 90$

$$= -72 + 40 - 20$$

$$= -92 + 40$$

$$= -52 \text{ Nm} \quad \text{Jawabannya (C)}$$

9.  $Z_0 = (X_0, Y_0)$

$$= (10, 18) \text{ cm}$$

$$Y_0 = \frac{A_1 Y_1 - A_2 Y_2}{A_1 - A_2}$$

$$= \frac{7560}{540}$$

$$= 14 \text{ cm}$$

$$\text{Maka } \Delta y = 18 \text{ cm} - 14 \text{ cm}$$

$$= 4 \text{ cm}$$

jawabannya (E)

10. dik :  $m_a = 8 \text{ kg}, m_b = 11 \text{ kg}, m_k = 2 \text{ kg}, I = 1/2 m r^2$

Ditanya :  $T_a = ?$

$$\text{Jawab : } a = \frac{(m_b - m_a)g}{(m_a + m_b + 0,5 m_k)}$$

$$a = \frac{(11-8)10}{(11+8+1)} \mu$$

$$a = 3/2 \text{ m/s}^2$$

$$\sum F = ma$$

$$T - w = ma$$

$$T = ma + w$$

$$= 8.3/2 + 80$$

$$= 92 \text{ N}$$

Jawabannya (D)

11.

Dik :  $m = 4 \text{ kg}$                        $F = 6 \text{ N}$

$V = 5 \text{ m/s}$                                        $\Delta s = 7 \text{ meter}$

Dit :  $E_k$  ?

Jawab :

$$W = \Delta E_k$$

$$F \cdot \Delta s = \Delta E_k$$

$$F \cdot \Delta s = \frac{1}{2} m V_2^2 - \frac{1}{2} m V^2$$

$$E_{k2} = F \cdot \Delta s + \frac{1}{2} m V^2$$

$$= 6 \cdot 7 + \frac{1}{2} \cdot 4 \cdot 25$$

$$= 42 + 50$$

$$= 92 \text{ Joule}$$

Jawabannya (E)

12. dik :  $F = 12 \text{ N}$

$$\Delta X_1 = 4 \text{ cm} = 0,04 \text{ m}$$

$$\Delta X_2 = 10 \text{ cm} = 0,1 \text{ m}$$

Jawab :  $k = \frac{12}{0,04} = 300$

$$W = \frac{1}{2} \times k \times \Delta x_2^2$$

$$= \frac{1}{2} \times 300 \times 0,1^2$$

$$= 1,5 \text{ joule}$$

Jawabannya (A)

13. Dik:  $m = 0,5 \text{ kg}$  ,  $l = 2 \text{ m}$  ,  $g = 10 \text{ m/s}^2$  ,  $\Theta = 30$  derajat

Dit :  $E_k$  ?

Jawab :

I)  $E_M = E_P = m \times g \times h = 0,5 \times 10 \times 2 = 10 \text{ joule}$

II)  $h = l \cos \Theta = 2 \times \cos 60 = 2 \times 0,5 = 1$

$$E_P = m \times g \times h = 0,5 \times 10 \times 1 = 5$$

$$E_K = E_M - E_P = 10 - 5 = 5 \text{ joule}$$

Jawabanya ( A )

14.

Dik :  $m = 400 \text{ gr}$

$$t = 6 \text{ s}$$

$$V_0 = 20 \text{ m/s}$$

Dit :  $V$  pada saat  $t = 4 \text{ s}$ ?

Jwb :  $F = m \cdot a$                        $V_t = V_0 - a \cdot t$   
 $3 = 0,4 \cdot a$                                $V_t = 20 - 30/4 \cdot 4$   
 $a = 30/4$                                    $V_t = 20 - 30 = -10 \text{ m/s}$  (tanda negatif berarti perlambatan karena sesuai dengan grafik yang turun)    Jawabannya (A)

15.

Diketahui        :  $m_a = m_b = 3 \text{ kg}$   
 $V_a = 20 \text{ m/s}$   
 $V_b = 10 \text{ m/s}$

Bertumbukan lenting sempurna

Ditanya                : Kecepatan masing-masing benda setelah tumbukan ?

Jawab                :  $e = - \left( \frac{v_b' - v_a'}{v_b - v_a} \right)$   
 $1 = - \left( \frac{v_b' - v_a'}{10 - 20} \right)$   
 $1 = - \left( \frac{v_b' - v_a'}{-10} \right)$   
 $10 = v_b' - v_a'$   
 $v_a' = v_b' - 10$

$P_{awal} = P_{akhir}$   
 $m_A v_a + m_B v_b = m_A v_a' + m_B v_b'$   
 $3 \cdot 20 + 3 \cdot 10 = 3(v_b' - 10) + 3 v_b'$   
 $60 + 30 = 3 v_b' - 30 + 3 v_b'$   
 $120 = 6 v_b'$   
 $20 = v_b'$  Ke kanan

$v_a' = v_b' - 10$   
 $= 20 - 10$   
 $= 10$  Kekiri

Karena, bertumbukan lenting sempurna maka kedua bola akan bertukar kecepatan dan arahnya akan berlawanan. Jawabannya (D)

16. (A) Massa jenis air dan volume air yang dipindahkan  
 Karena  $F_a = \rho g v$  Jawabannya (A)

Dik :  $h = y = 3,2 \text{ m}$  ;  $A = 0,5 \text{ cm}^2$  ;  $g = 10 \text{ m/s}^2$

Dit :  $V$  ? saat  $t = 5 \text{ s}$ .

Jawab :

GLBB vertikal ke atas

$$vt^2 = v_0^2 - 2gy$$

$$0^2 = v_0^2 - 2 \cdot 10 \cdot 3,2$$

$$0 = v_0^2 - 64$$

$$64 = v_0^2$$

$$v_0 = \sqrt{64} = 8$$

$$Q = Q$$

$$Av = \frac{V}{t}$$

$$0,5 \cdot 10^{-4} \cdot 8 = \frac{V}{5}$$

$$V = 20 \cdot 10^{-4} \text{ m}^3$$

$$= 20 \cdot 10^{-4} \cdot 10^3 \text{ dm}^3$$

$$= 2 \text{ dm}^3 \text{ Jawabannya (C)}$$

18.

Dik :  $A_1 = 4 \text{ m}^2$

$$A_2 = 4,3048 \text{ m}^2$$

$$T_1 = 0^\circ\text{C}$$

$$T_2 = 100^\circ\text{C}$$

Dit : koefisien muai panjang ( $\alpha$ )?

Jawab :  $A_2 = A_1 (1 + \beta \cdot \Delta T)$

$$4,3048 = 4 (1 + \beta (100-0))$$

$$1,0762 = 1 + 100 \beta$$

$$0,762 = 100 \beta$$

$$\beta = 7,62 \times 10^{-3}$$

$$\alpha = \frac{\beta}{2} = \frac{7,62 \times 10^{-3}}{2} = 3,81 \times 10^{-3} \text{ (A)}$$

19. Diket.  $T_1 = 500 \text{ K}$      $T_2 = 1000 \text{ K}$

$$Q_1 = a \text{ Joule}$$

Dit.  $Q_2 = \dots$

$$\frac{Q_2}{Q_1} = \left(\frac{T_2}{T_1}\right)^4 = (1000/500)^4 = 16$$

$$\text{Maka } Q_2 = 16 a \text{ Jawabannya (A)}$$

20. dik:  $m_{\text{air}} = 150 \text{ gr}$ , suhu awal air =  $80^\circ \text{C}$  suhu akhir air =  $20^\circ \text{C}$  suhu es =  $0^\circ \text{C}$ ,  $C_{\text{air}} = 1 \text{ kal/gr } ^\circ\text{C}$ ,  $C_{\text{es}} = 0,5 \text{ kal/gr } ^\circ\text{C}$ ,  $L_{\text{es}} = 80 \text{ kal/gr}$

Tentukan : massa es

Jawab :  $Q_{\text{lepas}} = Q_{\text{terima}}$

$$mc\Delta t = mc\Delta t + mL_{\text{es}}$$

$$150 \cdot 1 \cdot 60 = m \cdot 0,5 \cdot 20 + m \cdot 80$$

$$9000 = m \cdot 10 + m \cdot 80$$

$$90m = 9000$$

$$m = 100 \text{ gr (D)}$$

21.

B. Pada saat gas melakukan usaha maka energi dalam gas berkurang

22.

Dik :  $V_1 = 3 \text{ m}^3$

$$P_1 = 2 \text{ atm} = 2 \times 10^5 \text{ N/m}^2$$

$$T_1 = 27^\circ\text{C} = 300 \text{ K}$$

$$T_2 = 227^\circ\text{C} = 500 \text{ K}$$

$$P_2 = P_1$$

Dit :  $W = \dots?$

$$\frac{P_1 V_1}{T_1} = \frac{P_2 V_2}{T_2}$$

$$\frac{3}{300} = \frac{V_2}{500}$$

$$V_2 = \frac{500 \times 3}{300}$$

$$V_2 = 5 \text{ m}^3$$

$$W = P (V_2 - V_1)$$

$$W = 2 \times 10^5 (5 - 3)$$

$$W = 2 \times 10^5 (2)$$

$$W = 4 \times 10^5 \text{ J}$$

Jawabannya (D)

23. Dik :  $T_1 : 227^\circ\text{C} \rightarrow 500^\circ\text{K}$

$$\eta_1 : 30 \%$$

$$\eta_2 : 50 \%$$

Dit :  $T_2$  dari  $\eta_2?$

Jawab :

- $\eta_1 = 1 - \frac{T_2}{T_1} \cdot 100 \%$

$$30\% = 1 - \frac{T_2}{500} \cdot 100\%$$

$$0,3 = \frac{500 - T_2}{500}$$

$$150 = 500 - T_2$$

$$T_2 = 350^\circ\text{K}$$

- $\eta_2 = 1 - \frac{T_2}{T_1} \cdot 100\%$

$$50\% = 1 - \frac{350}{T_1} \cdot 100\%$$

$$0,5 = 1 - \frac{350}{T_1}$$

$$\frac{350}{T_1} = 1 - 0,5$$

$$T_1 = \frac{350}{0,5} = 700^\circ\text{K} = 427^\circ\text{C} \text{ Jawabannya (E)}$$

24. Dik :  
 $Y = 0,03 \sin \pi(5t + 4x)$

dit : pernyataan yang benar ?  
 $A = ?$

$F = ?$   
 $\lambda = ?$

Jawab :

$$Y = A \sin(\omega t - kx)$$

$$\omega = 2\pi f$$

$$Y = 0,03 \sin(5\pi t - 4\pi x)$$

$$5\pi = 2\pi f, f = 5/2 = 2,5 \text{ Hz}$$

$$A = 0,03 \text{ m} = 3 \text{ cm}$$

$$K = 2\pi/\lambda$$

$$v = \lambda f$$

$$4\pi = 2\pi/\lambda, \lambda = 1/2 \text{ m}$$

$$= 1/2 \cdot 5/2 = 1,25 \text{ m/s}$$

Jadi pernyataan yang benar adalah : 1,3, dan 4 (E)

25. Kegunaan gelombang elektromagnetik maka pernyataan yang benar adalah :  
 Jawabannya adalah (C)

26. soal no 26. dik :  $f_{ob} = 2 \text{ cm}$ ;  $f_{ok} = 2,5 \text{ cm}$ ;  $s_{ob} = 2,2 \text{ cm}$ ;  $S_n = 25$ ; karena bayangan lensa obyektif jatuh di titik fokus okuler maka mata tidak berakomodasi.

Dit :  $d \dots ?$

$$\text{Jawab : } \frac{1}{f_{ob}} = \frac{1}{s_{ob}} - \frac{1}{s_{ob}'}$$

$$\frac{1}{s_{ob}'} = \frac{1}{2} - \frac{1}{2,2}$$

$$\frac{1}{s_{ob}'} = \frac{11-10}{22} = \frac{1}{22}$$

$$s_{ob}' = 22 \text{ cm}$$

$$d = s_{ob}' + f_{ok}$$

$$= 22 \text{ cm} + 2,5 \text{ cm}$$

$$= 24,5 \text{ cm (B)}$$

27. Soal no 27

$$\text{Dik : } \lambda = 6.000 \text{ \AA} = 6 \cdot 10^{-4} \text{ mm}$$

$$L = 60 \text{ cm} = 600 \text{ mm}$$

$$d = 0,6 \text{ mm}$$

Dit :  $P_{G3} ?$

$$\text{Jwb : } \frac{P \cdot d}{L} = m \cdot \lambda$$

$$P_{G3} = \frac{m \cdot \lambda \cdot L}{d}$$

$$P_{G3} = \frac{2,5 \cdot 6 \cdot 10^{-4} \cdot 6 \cdot 10^2}{6 \cdot 10^{-1}}$$

$$P_{G3} = 15 \cdot 10^{-1}$$

$$P_{G3} = 1,5 \text{ mm} \quad \text{Jawabannya (B)}$$

28. Diket :  $\lambda = 600 \text{ nm} = 6,10^{-5} \text{ cm}$

$$N = 4000 \text{ garis / cm}$$

$$d = 2,5 \cdot 10^{-4} \text{ cm}$$

$$l = 50 \text{ cm}$$

Dit.  $Y = \dots \dots \dots$

$$\frac{dy}{l} = n \lambda \rightarrow y = n \lambda \cdot l / d$$

$$= 12 \text{ cm} \quad \text{Jawabannya (D)}$$

29. Dik :  $v_p = 20 \text{ m/s}$   
 $v_s = 30 \text{ m/s}$   
 $v = 330 \text{ m/s}$   
 $f_s = 600 \text{ Hz}$

Dit :  $f_p ?$

Jawab :

$$f_p = \frac{v + v_p}{v - v_s} \cdot f_s$$

$$f_p = \frac{330 + 20}{330 - 30} \cdot 600$$

$$f_p = 350 \cdot 2 = 700 \text{ Hz} \quad \text{Jawabannya (B)}$$

30. Diket  $I_1 = 4,5 \cdot 10^{-7} \text{ watt/m}^2$

$$R_1 = 2 \text{ m} \quad R_2 = 6 \text{ m}$$

Dit :  $I_2 = \dots$

$$\frac{I_2}{I_1} = (R_1 / R_2)^2 = (2/6)^2 = 1/9 \quad \text{maka } I_2 = 1/9 I_1$$

$$I_2 = 1/9 (4,5 \cdot 10^{-7}) = 5,0 \cdot 10^{-8} \text{ watt/m}^2 \quad \text{jawabannya C}$$

31. Dik :  $n_1 = 10$ ,  $TI_1 = 80 \text{ dB}$ ,  $I_0 = 10^{-12}$

Dit :  $I_2 = ?$  jika  $n_2 = 1$

Jawab :

$$(TI_1 - TI_2) = 10 \log \frac{n_1}{n_2}$$

$$(80 - TI_2) = 10 \log \frac{10}{1}$$

$$80 - 10 = TI_2$$

$$TI_2 = 70 \text{ dB}$$

$$TI_2 = 10 \log I / 10^{-12}$$

$$7 = \log I / 10^{-12}$$

$$I = 10^{-12} / 10^{-7}$$

$$I = 10^{-5} \text{ watt/m}^2 \quad \text{Jawabannya (C)}$$

32. Jawab :  $F_{AB} = 9 \cdot 10^9 \cdot \frac{1 \cdot 10^{-6} \cdot 4 \cdot 10^{-6}}{4 \cdot 10^{-2}}$

$$= 9 \cdot 10^4$$

$$F_{AC} = 9 \cdot 10^9 \cdot \frac{10^{-6} \cdot 2 \cdot 10^{-6}}{9 \cdot 10^{-2}}$$

$$= 2 \cdot 10^1$$

$$F = (9 \cdot 10^4) - (2 \cdot 10^1)$$

$$= 7 \cdot 10^4 = 0,7 \text{ N}$$

Jawaban (D)

33.  $E = k \frac{q}{R^2} \rightarrow 0 = k \frac{q_1}{R_1^2} + k \frac{q_2}{R_2^2}$



$$= 9 \cdot 10^9 \frac{4 \cdot 10^{-6}}{x^2} - 9 \cdot 10^9 \frac{16 \cdot 10^{-6}}{(120-x)^2}$$

$$\frac{4 \cdot 10^{-6}}{x^2} = \frac{16 \cdot 10^{-6}}{(120-x)^2}$$

$$2/x = 4/(120-x)$$

$$X = 40 \text{ cm sebelah kanan A} \quad \text{Jawab E}$$

34. Dik :  $v = 6 \text{ volt}$

$$C_1 = 12 \text{ F}$$

$$C_2 = 12 \text{ F}$$

$$C_3 = 6 \text{ F}$$

Dit : E....??

$$\text{Jawab: } E = \frac{1}{2} CV^2$$

$$\frac{1}{C_s} = \frac{1}{12} + \frac{1}{12} = 6 \text{ F}$$

$$C_{\text{total}} = 6 + 6 = 12 \text{ F}$$

$$E = \frac{1}{2} 12 \cdot 36 = 216 \text{ joule Jawabannya (D)}$$

35.

Diketahui:  $q_1 = +2 \mu\text{C} = +2 \times 10^{-6} \text{ C}$

$$q_2 = +5 \mu\text{C} = +5 \times 10^{-6} \text{ C}$$

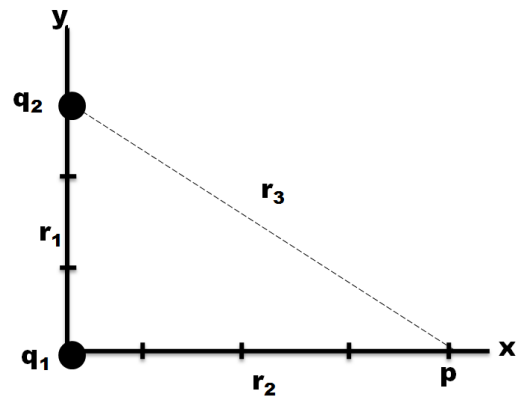
$$r_1 = 3 \text{ m}$$

$$r_2 = 4 \text{ m}$$

$$k = 9 \times 10^9 \text{ Nm}^2\text{C}^{-2}$$

Ditanya:  $V_p = ?$

Jawab:  $r_3 = \sqrt{r_1^2 + r_2^2}$   
 $= \sqrt{3^2 + 4^2}$   
 $= \sqrt{25}$   
 $= 5 \text{ m}$



$$V_1 = k \frac{q_1}{r_2} = 9 \times 10^9 \cdot \frac{+2 \times 10^{-6}}{4} = +4,5 \times 10^3 \text{ V}$$

$$V_2 = k \frac{q_2}{r_3} = 9 \times 10^9 \cdot \frac{+5 \times 10^{-6}}{5} = +9,0 \times 10^3 \text{ V}$$

$$V_p = V_1 + V_2$$

$$= +4,5 \times 10^3 \text{ V} + (+9,0 \times 10^3 \text{ V})$$

$$= +13,5 \times 10^3 \text{ V (E)}$$

36.  $\sum \varepsilon + \sum IR = 0$

$$- \varepsilon_1 - \varepsilon_2 + \varepsilon_3 + I(R_1 + R_2 + R_3 + R_4) = 0$$

$$-9 - 3 + 4 + I(1 + 2 + 2 + 5) = 0$$

$$-8 + I(10) = 0$$

$$I = 0,8 \text{ A}$$

$$V_{AC} = I R_4 - \varepsilon_1$$

$$= -5 \text{ volt}$$

C

37.

Dik :  $i = 7 \text{ A}$

$$a = 3,5 \text{ cm} = 3,5 \cdot 10^{-2} \text{ m}$$

$$\mu_0 = 4\pi \cdot 10^{-7} \text{ Wb/A} \cdot \text{m}$$

Dit :  $B$  ( kawat melingkar ) ?

Jawab :

$$B = \frac{\mu_0 \cdot i}{2 \cdot a} \times 3/4$$

$$B = \frac{4\pi \cdot 10^{-7} \cdot 7}{2 \cdot 3,5 \cdot 10^{-2}} \times 3/4 = 3\pi \cdot 10^{-5} \text{ T} \quad \text{Jawabannya (A)}$$

38. dik :  $q = 0,03 \mu\text{C} = 3 \cdot 10^{-8} \text{ C}$

$$v = 6 \cdot 10^6 \text{ m/s}$$

$$\mu_0 = 4\pi \cdot 10^{-7} \text{ W A}^{-1}\text{m}^{-1}$$

Fq....?

$$F = B q v \sin 90$$

$$= \frac{\mu_0 \cdot i \cdot q \cdot v \cdot 1}{2\pi a}$$

$$= \frac{4\pi \cdot 10^{-7} \cdot 10 \cdot 3 \cdot 10^{-8} \cdot 3 \cdot 10^6}{2\pi \cdot 4 \cdot 10^{-2}}$$

$$= 9 \cdot 10^{-6} \text{ N} \text{ menuju kawat (D)}$$

39. No. 39

Jawaban (c)

1. jumlah lilitan kumparan

3. luas bidang kumparan

4. kuat arus yang melalui kumparan

40 Dik:

$$R = 500 \text{ ohm}$$

$$L = 8 \text{ H}$$

$$C = 5 \mu\text{F} = 5 \times 10^{-6} \text{ F}$$

$$V = 130 \sin 100t$$

$$\omega = 100 \text{ rad/s}$$

Dit: Pernyataan yang benar ?

Jawab

$$1). X_L = \omega \cdot L = 8 \cdot 100 = 800 \text{ Ohm}$$

$$X_C = 1/\omega \cdot C = 1/100 \cdot 5 \times 10^{-6} = 2000 \text{ Ohm}$$

$$Z = \sqrt{R^2 + (X_L^2 - X_C^2)}$$

$$= \sqrt{250000 + 144000}$$

$$= 1300 \text{ Ohm}$$

$$2) I_{\text{max}} = V_{\text{max}}/Z = 130/1300 = 0,1 \text{ Ohm}$$

$$3). V_R = I_{\text{max}} \cdot R = 0,1 \cdot 500 = 50 \text{ volt}$$

$$4). f = 1/2\pi \sqrt{1/LC}$$

$$= 1/2\pi \sqrt{1/4 \times 10^{-5}}$$

$$= 25/\pi \sqrt{10} \text{ Hz} \quad \text{Jawabannya (A)}$$

