

**FIZIK  
TINGKATAN 4**

**BAB 1  
PENGENALAN KEPADA FIZIK**

**SKEMA  
MODUL  
CEMERLANG**

## KERTAS 1

1. A
2. D
3. C
4. C
5. C

## KERTAS 2 BAHAGIAN A.

1.a) sistematik

b)(i) 0.03 cm

(ii) mengukur diameter dalam

c) 3.20 cm

1.a)

P → Q → R → Q → P

b)(i) 0.01 s

(ii) 2.25 s

c)

Scalar quantity

*Kuantiti skalar*

### KERTAS 3 (BAHAGIAN A)

1a) (i) panjang wayar//  $l$

(ii) rintangan //  $R$ // voltan//  $V$ //beza keupayaan

(iii) ketebalan dawai// diameter dawai// suhu dawai

**(Reject : jenis dawai)**

b)(i) Rajah B = 0.4 V

Rajah C = 0.9 V

Rajah D = 1.3 V

Rajah E = 1.7 V

Rajah F = 2.2 V

**(Accept without unit// Reject wrong unit// 1 decimal place)**

(2 marks – ALL 5 correct)

(1 mark – 4- 3 correct)

(0 mark – 1-2 correct)

(ii)  $R_B = 0.8 \Omega$

$R_C = 1.8 \Omega$

$R_D = 2.6 \Omega$

$R_E = 3.4 \Omega$

$R_F = 4.4 \Omega$

**(Accept without unit// Reject wrong unit// 1 decimal place)**

(2 marks – ALL 5 correct)

(1 mark – 4- 3 correct)

(0 mark – 1-2 correct)

(iii)

| $L$ (cm) | $V$ (V) | $R(\Omega)$ |
|----------|---------|-------------|
| 20.0     | 0.4     | 0.8         |
| 40.0     | 0.9     | 1.8         |
| 60.0     | 1.3     | 2.6         |
| 80.0     | 1.7     | 3.4         |
| 100.0    | 2.2     | 4.4         |

Table TIPS

1V-  $I$ ,  $V$  and  $R$

1V- unit

1V- all  $I$ ,  $V$ ,  $R$  correct

1V- consistency

#### JIKA:

Pelajar telah menjawab salah pada soalan 1b(ii), maka jadual adalah berdasarkan nilai jawapan pelajar tersebut. Semak seperti biasa.(bukan ikut jawapan skema)

- c) berkadar terus // bertambah secara linear (bergantung kepada graf)  
**(Reject : hanging graph//skala tak seragam)**

d)

1V-paksi **[reject: terbalik]**  
 1V-unit paksi **[reject jika V atas reject]**  
 1V-uniform scale **[reject odd/non uniform scale]**  
**[accept skala yang tidak bermula dari asalan]**

2V-V-plot **[all 5 points - 2V]**  
**[4-3 points- 1V]**  
**[2-0 points plotted- 0 V]**

1V-garis lurus penyesuaian terbaik **[beza atas bawah=0/1]**  
 1V-size of graph **(must >50% from starting point until last point)**

7V - 5m  
 6-5V - 4m  
 4-3V - 3m  
 2V - 2m  
 1V - 1m

- 1a) (i) jisim//  $m$   
 (ii) suhu //  $^{\circ}\text{C}$ // kenaikan suhu//  $\Delta$  suhu  
 (iii) muatan haba tentu cecair// kuantiti haba yang dibekalkan  
**(Reject : jenis cecair)**

- b)(i)  $\theta_o = 25.0^{\circ}\text{C}$  **(Accept without unit// Reject wrong unit/1 decimal place)**

- (ii) Rajah 1.3 =  $8.0 \text{ kg}^{-1}$   
 Rajah 1.4 =  $4.4 \text{ kg}^{-1}$   
 Rajah 1.5 =  $3.1 \text{ kg}^{-1}$   
 Rajah 1.6 =  $2.4 \text{ kg}^{-1}$   
 Rajah 1.7 =  $1.9 \text{ kg}^{-1}$   
**(Accept without unit/ Reject wrong unit//1 decimal place)**  
**(1 mark – ALL corrects)**

(iii) Rajah 1.3 = 62.0 °C

Rajah 1.4 = 45.0 °C

Rajah 1.5 = 39.0 °C

Rajah 1.6 = 36.0 °C

Rajah 1.7 = 34.0 °C

**(Accept without unit// Reject wrong unit// 1 decimal place)**

(1 mark – ALL 5 correct)

(iv) Rajah 1.3 = 37.0 °C

Rajah 1.4 = 20.0 °C

Rajah 1.5 = 14.0 °C

Rajah 1.6 = 11.0 °C

Rajah 1.7 = 9.0 °C

**(Accept without unit// Reject wrong unit// 1 decimal place)**

(1 mark – ALL 5 correct)

(iii)

| m (kg) | 1/m (kg <sup>-1</sup> ) | $\theta_1$ (°C) | $\Delta \theta$ (°C) |
|--------|-------------------------|-----------------|----------------------|
|        |                         |                 |                      |
|        |                         |                 |                      |
|        |                         |                 |                      |
|        |                         |                 |                      |
|        |                         |                 |                      |

Table TIPS

1V- m, 1/m,  $\theta_1$ ,  $\Delta \theta$

1V- unit

1V- all m, 1/m,  $\theta_1$ ,  $\Delta \theta$

1V- consistency

4V- 2 marks

3V-2V - 1 mark

1V - 0 mark

**JIKA:**

Pelajar telah menjawab salah pada soalan 1b(ii), maka jadual adalah berdasarkan nilai jawapan pelajar tersebut. Semak seperti biasa.(bukan ikut jawapan skema)

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1V-paksi [**reject: terbalik**]

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1V-uniform scale [**reject odd/non uniform scale**]

[**accept skala yang tidak bermula dari asalan**]

2VV-plot [**all 5 points - 2V**]

[**4-3 points- 1V**]

[**2-0 points plotted- 0 v**]

1V-garis lurus penyesuaian terbaik [**beza atas bawah=0/1**]

1V-size of graph (**must >50% from starting point until last point**)

7V - 5m

6-5V - 4m

4-3V - 3m

2V - 2m

1V - 1m

### KERTAS 3 (BAHAGIAN B)

2a(i)  $v$  decrease //  $v$  decrease linearly to  $I$

(ii) Show a extrapolation line on graph  
1.0 V // 1 V // 1.05 V // (1.00 - 1.1V) (with correct unit)

(iii) Electromotive force// e.m.f

b(i) Show a big triangle on graph  
Substitution:

$$m = \frac{0.5 - 1.0}{0.73 - 0.0}$$

$$m = -0.685 \, \Omega \text{ @ } -0.685 \, \text{VA}^{-1} \text{ (Answer with unit)}$$

$(-0.68 \geq m \geq -0.69)$