JAWAPAN

EKSPERIMEN KENDIRI FIZIK TINGKATAN 5

EKSPERIMEN 1: Ciri-Ciri Pembiasan Gelombang

Pernyataan masalah/*Problem statement*:
Apakah ciri-ciri pembiasan gelombang satah dalam tangki riak?
What are the characteristics of the refraction of plane waves in a ripple tank?

Pemboleh ubah/*Variables*:
(a) Kedalaman air/*The depth of water*
(b) Corak gelombang/*The pattern of waves*

Perbincangan/*Discussion*:
1. (a) dalam, cetek
   deep, shallow
   (b) lebih pendek
   shorter
2. sama
   same

Kesimpulan/*Conclusion*:
1. pembiasan gelombang
   refraction of waves
2. panjang gelombang, arah perambatan, laju gelombang, frekuensi gelombang
   wavelength, the direction of propagation, the wave speed, frequency of waves

EKSPERIMEN 2: Interferens Gelombang Bunyi

Hipotesis/*Hypothesis*:
Jarak di antara dua bunyi kuat yang berturutan, *x*, dipengaruhi oleh jarak pemisahan antara dua sumber bunyi itu.
The distance between two consecutive loud sounds, x, is affected by the separation distance between the two sources of sound.

Pemboleh ubah/*Variables*:
(a) Jarak pemisahan antara dua pembesar suara, *a*
   Separation distance between two loudspeakers, a
(c) Frekuensi bunyi, *f*
   Sound frequency, f

Perbincangan/*Discussion*:
1. membina
   Constructive
2. amplitud, frekuensi
   amplitude, frequency
3. berkurang
   decreases
4. songsang
   inversely

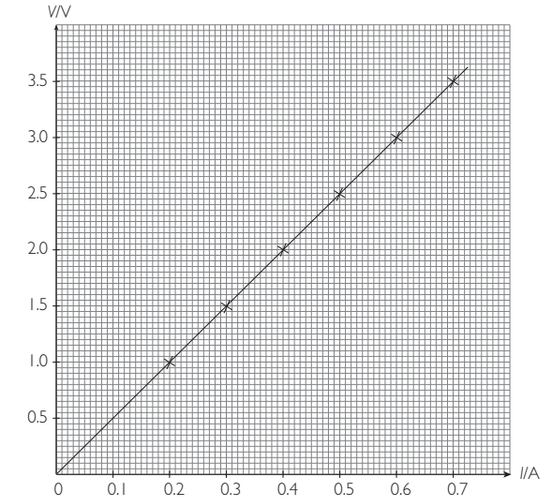
Kesimpulan/*Conclusion*:
kuat, berkurang
loud, decreases

EKSPERIMEN 3: Hubungan antara Arus Elektrik dan Beza Keupayaan

Hipotesis/*Hypothesis*:
Apabila arus yang mengalir melalui suatu dawai konstantan bertambah, beza keupayaan merentasi dawai konstantan juga bertambah.
When the current flowing through a constantan wire increases, the potential difference across the constantan wire also increases.

Pemboleh ubah/*Variables*:
(c) Panjang dawai konstantan
   The length of the constantan wire

Pemerhatian/*Observation*:



Perbincangan/*Discussion*:
1. mengawal, arus
   control, current
2. tetap
   constant
3. Kecerunan graf = nilai rintangan dawai
   Gradient of graph = the value of resistance of wire
   $= \frac{3.00 - 0}{0.60 - 0}$
   $= 5.00\ \Omega$
4. kemas, tegak, ralat paralaks
   tightly, vertically, parallax error

Kesimpulan/*Conclusion*:
1. bertambah, dimalarkan
   increases, constant
2. malar
   constant

EKSPERIMEN 4: Daya Gerak Elektrik dan Rintangan Dalam

Pernyataan masalah/*Problem statement*:
Bagaimanakah beza keupayaan merentasi terminal sel kering bergantung kepada arus yang melalui sel itu?
How does the potential difference across the terminals of a dry cell depend on the current passing through the cell?

Pemboleh ubah/*Variables*:
(a) Arus, *I*
   Current, I
(b) Beza keupayaan, *V* merentasi terminal sel kering
   The potential difference, V, across the terminals of dry cell

Perbincangan/*Discussion*:
1. mengukur beza keupayaan, *V*
   measure the potential difference, V
2. mengukur arus, *I*
   measure the current, I
3. kerosakan, pemanasan yang berlebihan
   damage, over-heating
4. Matikan
   Switch off

Kesimpulan/*Conclusion*:
1. berkurang, bertambah
   decreases, increases
2. paksi-*V*
   V-axis

EKSPERIMEN 5: Faktor-faktor yang Mempengaruhi Magnitud Arus Aruhan

Hipotesis/*Hypothesis*:

Magnitud arus aruhan bertambah apabila laju magnet bertambah.
The magnitude of the induced current increases when the speed of the magnet increases.

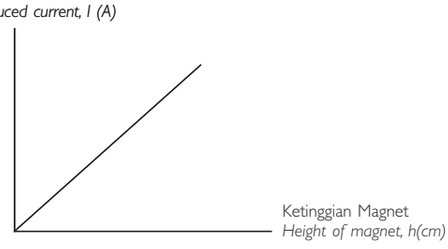
Pemboleh ubah/*Variables*:

(b) Magnitud arus aruhan
Magnitude of the induced current

(c) Kekuatan magnet/Bilangan lilitan dalam gegelung
The strength of the magnet/The number of turns in the coil

Perbincangan/*Discussion*:

1. diaruhkan, perubahan fluks
   induced, changing magnetic flux
2. (a) medan, fluks
   field, flux
   (b) aruhan, pemesongan
   induced, deflection
3. (a) Bertambah
   Increases
   (b) bertambah
   increases
   (c) Aruhan elektromagnet
   Electromagnetic induction
   (d) Arus aruhan
   Induced current, I (A)



Kesimpulan/*Conclusion*:
terus, ketinggian
directly, height

EKSPERIMEN 6: Hubungan antara Voltan Input, V_p dengan Voltan Output, V_s kepada Bilangan Lilitan dalam Gegelung Primer, N_p dengan Bilangan Lilitan dalam Gegelung Sekunder, N_s

Hipotesis/*Hypothesis*:

Nisbah $\frac{V_p}{V_s}$ adalah sama dengan $\frac{N_p}{N_s}$.

The ratio of $\frac{V_p}{V_s}$ *is equal to the ratio of* $\frac{N_p}{N_s}$.

Pemboleh ubah/*Variables*:

(a) Nisbah bilangan lilitan gegelung primer kepada bilangan lilitan gegelung sekunder, $\frac{N_p}{N_s}$
The ratio of primary turns to secondary turns, $\frac{N_p}{N_s}$

(c) Jenis teras besi lembut
The type of soft-iron core

Keputusan/*Results*:

N_p	N_s	$\frac{N_p}{N_s}$	V_p	V_s	$\frac{V_p}{V_s}$
10	10	1.00	2	2	1.00
10	20	0.50	2	4	0.50
10	30	0.33	2	6	0.33
10	40	0.25	2	8	0.25
10	50	0.20	2	10	0.20
10	60	0.17	2	12	0.17

Perbincangan/*Discussion*:

1. voltmeter a.u, primer
   a.c. voltmeter, primary
2. voltmeter a.u, sekunder
   a.c. voltmeter, secondary
3. sama
   same