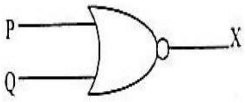

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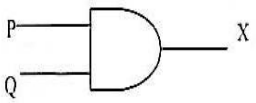
BENGKEL TEKNIK

FIZIK SPM 2016

SESERI

Success is depend on your mind and your will.

You are the one, who decide it. PROVE IT!!



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PART B Paper 3 Planning Experiment

1. Identify the MV and RV from the diagram and questions. **CIRCLE IT UP**
2. Identify the apparatus given to link to the PHYSICS CONCEPT of experiment.
3. Relate the experiment which you had done before in school and identity the relationship between the variables.
4. Identity the variable from the text and diagram.
   (a) Manipulated variable
   (b) Responding variable
   (c) Fixed variable (can be measured)
   ---NOT TYPE OF SUBSTANCE

Underline the variables of MV and RV from the diagram. Use the variables to substitute the format of Planning Experiment.

Tips for Paper 3 No 1 and No 2

1. Identity the variable from the text and diagram.
   (a) Manipulated variable
   (b) Responding variable
   (c) Fixed variable (can be measured)
   ---NOT TYPE OF SUBSTANCE

   (d) Observe the diagram measurement
   (e) Identity the value in table
   (f) Tabulate data with symbol and unit
   (g) Plan your graph (unit and symbol)
   (h) Determine the relationship from the graph

2. Read the question CAREFULLY
   (a) Extrapolate the graph and write the value next to it
   (b) Plot biggest triangle and get closest value with unit
   (c) Substitute the value correctly with 2 decimal places
   (d) Place precaution
   - Observe the reading perpendicular to the eyes to prevent parallax errors
   - Off the circuit when measurement is not taken to prevent heating of wires and cause systematic errors
   - Repeat the experiment for 3 times and determine the average to prevent systematic error

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Diagram 3.1 and Diagram 3.2 show that a foot feels more painful when it is step on by a high heel shoe compare to a flat one.
Rajah 3.1 dan Rajah 3.2 menunjukkan kaki merasa lebih sakit apabila dipijak oleh kasut bertumit tinggi berbanding kasut tapak rata.

(a) State one suitable inference. [1 mark]
Nyatakan satu inferens yang sesuai. [1 markah]

(b) State **one** suitable hypothesis. [1 mark]
*Nyatakan **satu** hipotesis yang sesuai.* [1 *markah*]

(c) With the use of apparatus such as load, ruler and others apparatus, describe an experiment to investigate the hypothesis stated in 3 (b).
Dengan menggunakan radas seperti beban, pembaris dan lain-lain, terangkan satu eksperimen untuk menyiasat hipotesis yang dinyatakan pada 3(b).
In your description, state clearly the following:
Dalam penerangan anda, nyatakan dengan jelas perkara berikut:

(i) Aim of the experiment.
Tujuan eksperimen.

(ii) Variables in the experiment.
Pembolehubah dalam eksperimen.

(iii) List of apparatus and materials.
Senarai radas dan bahan

(iv) Arrangement of the apparatus.
Susunan radas.

(v) The procedure of the experiment which include **one** method of controlling the manipulated variable and **one** method of measuring the responding variable.
*Prosedur eksperimen termasuk **satu** kaedah mengawal pembolehubah dimanipulasikan dan **satu** kaedah mengukur pembolehubah bergerak balas.*

(vi) The way you would tabulate the data.
Cara untuk menjadualkan data.

(vii) The way you would analyse the data.
Cara menganalisis data.

[10 marks]
[10 *markah*]

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2.

The lamp of the bicycle lights up when the magnet in the dynamo is rotated by turning the wheel.
Diagram 4.1 shows a lady cycles her bicycle with moderate velocity .
Diagram 4.2 shows a bicycle cyclist cycles his bicycle with high velocity. It is found that his bicycle's lamp lights up brighter.

Lampu sebuah basikal menyala apabila magnet di dalam dinamo itu berputar oleh putaran tayar.
Rajah 4.1 menunjukkan seorang wanita mengayuh basikalnya dengan kelajuan sederhana.
Rajah 4.2 pula menunjukkan seorang pelumba basikal mengayuh basikalnya dengan halaju yang tinggi. . Didapati nyalaan lampunya lebih terang.

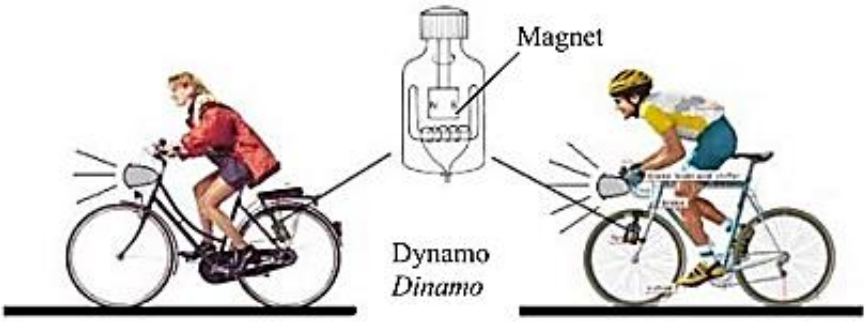

Diagram 4.1
Rajah 4.1

Diagram 4.2
Rajah 4.2

(c) With the use of apparatus such as a bar magnet, a coil of a copper wire and others describe one experiment framework to investigate the hypothesis stated in 4(b).

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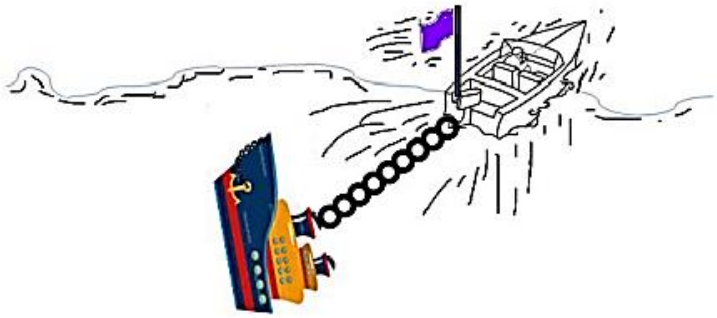
3.

Diagram 3.1 shows a worker driving a boat for towing a shipwreck in the middle of the ocean. He found it is difficult to bring the ships that partially immersed towards the beach quickly.

Rajah 3.2 menunjukkan pekerja itu memandu bot yang sama menunda sebuah kapal karam di tengah lautan. Dia mendapati mudah untuk menunda kapal yang tenggelam sepenuhnya ke tepi pantai.

Diagram 3.2 shows the worker driving the same boat towing a shipwreck in the middle of the ocean. He found that it is easy to bring the ship that fully immersed towards the beach.

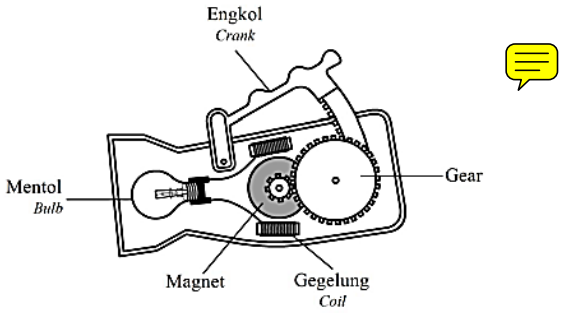
Rajah 3.1
Diagram 3.1



(c) Dengan menggunakan radas seperti benang, bikar, neraca spring dan lain-lain radas, terangkan satu rangka kerja eksperimen untuk menyiasat hipotesis yang andan yatakan di 3(b).
With the use of apparatus such as a thread, beaker, spring balance and other apparatus, describe an experiment framework to investigate the hypothesis stated in 3(b).

4.

Rajah 4 menunjukkan sebuah lampu suluh kuasa tangan yang mempunyai satu magnet dan dua gegelung dawai kuprum bertebat.
Mentol akan dinyalakan apabila magnet diputarkan dengan memampat engkol lampu suluh tersebut. Nyalaan bertambah terang apabila engkol dimampatkan dengan lebih laju.
Diagram 4 shows a hand powered flashlight which has a magnet and two coils of insulated copper wire.
The bulb will light up when the magnet is spanned by compressing the crank of the flashlight. The light gets brighter when the crank compressed faster.



Rajah 4
Diagram 4

(c) Dengan menggunakan radas seperti galvanometer dan gegelung wayar, terangkan satu eksperimen untuk mengkaji hipotesis yang dinyatakan di 4(b). Dalam penerangan anda, jelaskan perkara berikut:

With the use of apparatus such as galvanometer and coil, describe an experiment to investigate the hypothesis stated in 4(b).

5.

Diagram 3.1 shows a worker pushing down on the piston of a clogged bicycle pump. Diagram 3.2 shows the same worker finding it harder to push the piston further down.

With the use of apparatus such as a Bourdon gauge and other apparatus, describe an experiment to investigate the hypothesis stated.

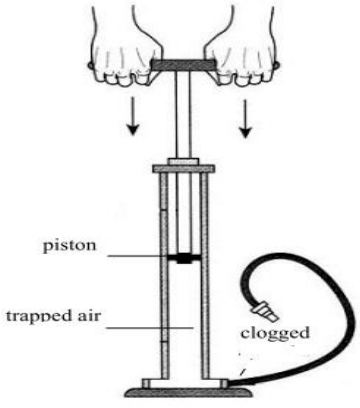


Diagram 3.1

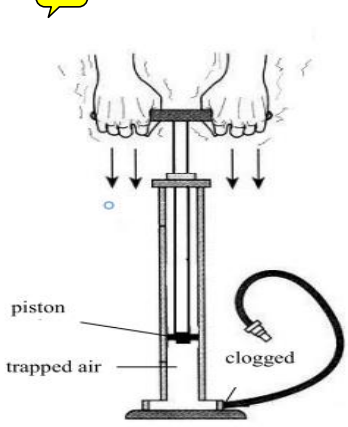


Diagram 3.2

4. Diagram 4.1 show a lamp which lights up with normal brightness when the dimmer knob is set at its minimum value. Diagram 4.2 shows the lamp dimmer when the dimmer knob is set at its maximum value.

With the use of apparatus such as constantan wire, voltmeter and other apparatus, describe an experiment to investigate the hypothesis stated.

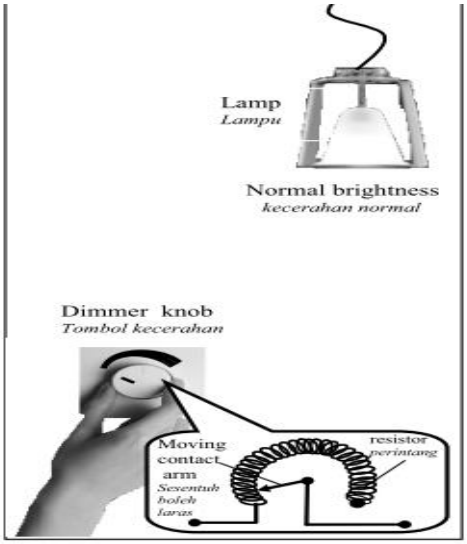


Diagram 4.1

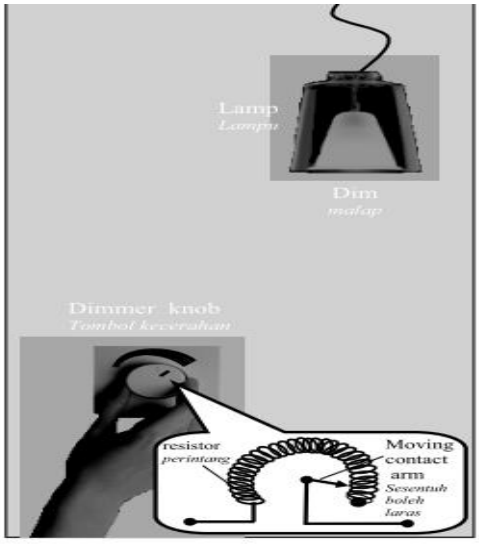


Diagram 4.2

1.

Diagram 3.1 shows an empty plastic bottle being left on the seat of a car on a hot afternoon.

Rajah 3.1 menunjukkan sebuah botol plastik kosong yang ditinggalkan di tempat duduk sebuah kereta pada waktu tengah hari yang panas.

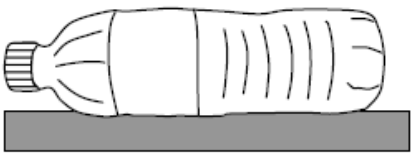


Diagram 3.1 / *Rajah* 3.1

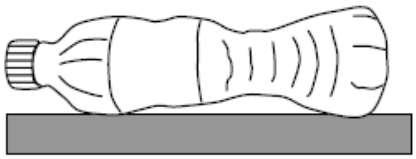


Diagram 3.2 / *Rajah* 3.2

Diagram 3.2 shows the same plastic bottle the following morning when the weather was very cold.

Rajah 3.2 menunjukkan botol plastik yang sama pada pagi berikutnya di mana cuaca sangat sejuk.

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With the use of apparatus such as a glass tube as shown in Diagram 3.3, water bath, and other apparatus, describe one experiment to investigate the hypothesis stated in 3(b).

Dengan menggunakan radas seperti tiub kaca seperti ditunjukkan dalam Rajah 3.3, kukusan air dan radas lain, terangkan satu eksperimen untuk menyiasat hipotesis yang dinyatakan di 3(b).

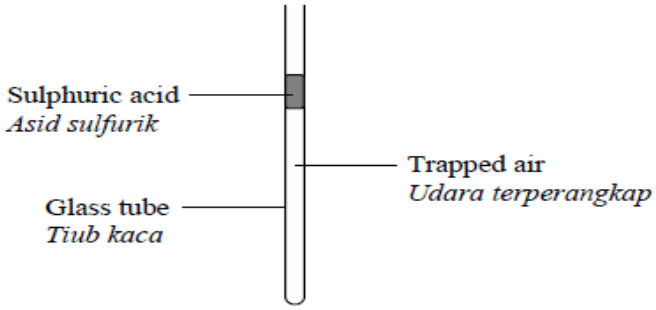

Diagram 3.3 / *Rajah* 3.3