

**NO KAD PENGENALAN**

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**ANGKA GILIRAN**

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**JABATAN PELAJARAN NEGERI JOHOR****PEPERIKSAAN PERCUBAAN  
SIJIL PELAJARAN MALAYSIA 2008****PHYSICS**

Kertas 1

Satu jam lima belas minit

**JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU**

1. *Kertas soalan ini mengandungi 50 soalan.*
2. *Jawab semua soalan.*
3. *Tiap-tiap soalan diikuti oleh empat pilihan yang berhuiruf A, B, C dan D. Bagi tiap-tiap soalan, pilih **satu** jawapan sahaja. Tandakan semua jawapan anda pada kertas jawapan objektif yang disediakan.*
4. *Calon dikehendaki membaca maklumat di halaman 2 dan 3.*

**Kertas soalan ini mengandungi 36 halaman bercetak****MOZ@C**

Each question is followed by either three, four or five options. Choose the best option for each question then blacken the correct space on the answer sheet.

Tiap-tiap soalan diikuti oleh sama ada tiga, empat atau lima pilihan jawapan. Pilih satu jawapan yang terbaik bagi setiap soalan dan hitamkan ruangan yang betul pada kertas jawapan anda.

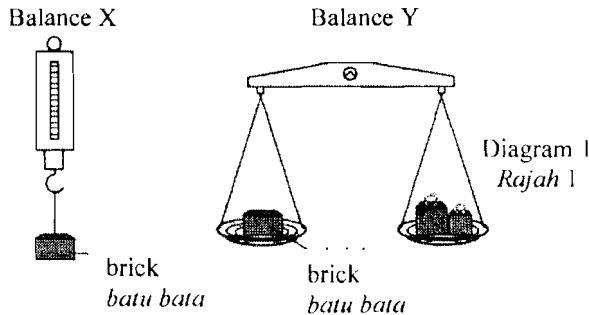
- 1 Which of the following is a base quantity and its SI unit ?

*Antara berikut yang manakah kuantiti asas dan unit SI nya?*

- |                  |                   |
|------------------|-------------------|
| A Mass / g       | B Time / h        |
| <i>Jisim / g</i> | <i>Masa / j</i>   |
| C Current / mA   | D Temperature / K |
| <i>Arus / mA</i> | <i>Suhu / K</i>   |

- 2 Diagram 1 shows a brick is placed on a balance X and then on balance Y.

*Rajah 1 menunjukkan satu batu bata diletakkan pada penimbang X dan kemudian pada penimbang Y.*



What is measured by each balance?

*Apakah yang disukat oleh setiap penimbang?*

- | <u>Balance X</u>         | <u>Balance Y</u>       |
|--------------------------|------------------------|
| A weight<br><i>berat</i> | mass<br><i>jisim</i>   |
| B mass<br><i>jisim</i>   | weight<br><i>berat</i> |
| C mass<br><i>jisim</i>   | mass<br><i>jisim</i>   |
| D weight<br><i>berat</i> | weight<br><i>berat</i> |

MOZ@C

- 3 Which of the following instruments is most accurate to measure the internal diameter of a water pipe?

*Antara alat pengukuran berikut, yang manakah paling jitu digunakan untuk mengukur diameter dalam sebatang paip air?*

- A meter rule

*pembaris meter*

- B measuring tape

*pita pengukur*

- C vernier calliper

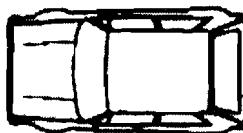
*angkup vernier*

- D micrometer screw gauge

*tolok skru mikrometer*

- 4 Diagram 2 shows the pattern of oil dripping at a constant rate from a moving car.

*Rajah 2 menunjukkan corak minyak menitis pada kadar seragam dari kereta yang sedang bergerak.*



Direction of movement  
*Arah gerakan*

Diagram 2  
*Rajah 2*

Which of the following describes the motion of the car?

*Antara yang berikut, yang manakah menguraikan gerakan kereta tersebut?*

- A Acceleration followed by constant velocity

*Pecutan diikuti dengan halaju seragam*

- B Deceleration followed by constant velocity

*Nyahpecutan diikuti dengan halaju seragam*

- C Constant velocity followed by acceleration

*Halaju seragam diikuti dengan pecutan*

- D Constant velocity followed by deceleration

*Halaju seragam diikuti dengan nyahpecutan*

- 5 Diagram 3 is a displacement-time graph showing the motion of a toy car.

Rajah 3 ialah graf sesaran-masa yang menunjukkan pergerakan sebuah kereta mainan.

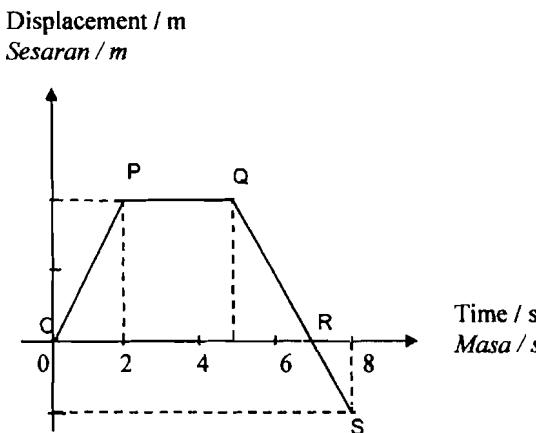


Diagram 3  
Rajah 3

Which of the following parts of the graph shows that the toy car is stationary?

Antara bahagian graf berikut, yang manakah menunjukkan kereta mainan itu pegun?

- A OP
- B PQ
- C QR
- D RS

6 Diagram 4 shows a heavy steam roller.

*Rajah 4 menunjukkan sebuah trektor pengelek stim yang berat.*

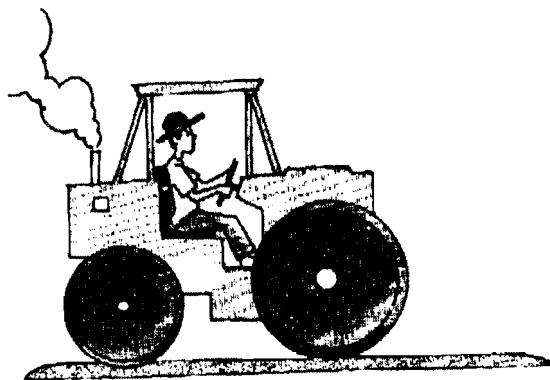


Diagram 4

*Rajah 4*

It is difficult to change the direction of this vehicle.

*Adalah sukar untuk menukar arah kendaraan ini.*

This statement refers to

*Pernyataan ini adalah merujuk kepada*

- A the concept of inertia  
*konsep inersia*
- B the concept of balanced forces  
*konsep keseimbangan daya*
- C the principle of conservation of energy  
*prinsip keabadian tenaga*
- D the principle of conservation of momentum  
*prinsip keabadian momentum*

- 7 Diagram 5 shows a boy pulling a box.

Rajah 5 menunjukkan seorang budak sedang menarik sebuah kotak.

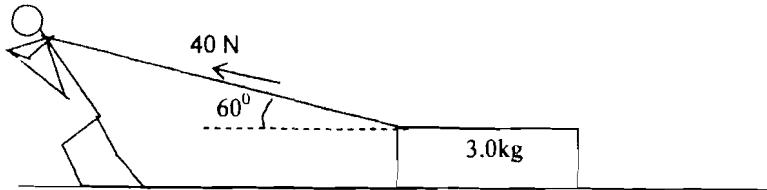


Diagram 5  
Rajah 5

Calculate the acceleration of the box.

Hitungkan pecutan kotak itu.

- A  $5.00 \text{ m s}^{-2}$       B  $6.67 \text{ m s}^{-2}$   
C  $11.67 \text{ m s}^{-2}$       D  $13.33 \text{ m s}^{-2}$

- 8 Diagram 6 shows a ball with a mass of  $1500 \text{ g}$  moving at a speed of  $4 \text{ m s}^{-1}$  being kicked by a football player. The ball rebounds at a speed of  $5 \text{ m s}^{-1}$ . The time of contact of the ball with the player is  $0.05\text{s}$ .

Rajah 6 menunjukkan sebiji bola berjisim  $500 \text{ g}$  sedang bergerak dengan kelajuan  $4 \text{ m s}^{-1}$  di sepak oleh pemain bola. Bola itu melantun dengan kelajuan  $5 \text{ m s}^{-1}$ . Masa sentuhan bola dengan pemain itu ialah  $0.05\text{s}$ .



Diagram 6  
Rajah 6

What is the impulsive force on the ball?

Berapakah daya impuls yang bertindak ke atas bola?

- A  $30 \text{ N}$   
B  $120 \text{ N}$   
C  $150 \text{ N}$   
D  $270 \text{ N}$

- 9 Why must the safety belts of a car be broad and able to lengthen slightly?

*Kenapa tali pinggangan keselamatan sebuah kereta mesti lebar dan boleh diperpanjangkan sedikit?*

- A To decrease pressure and increase impact time

*Untuk mengurangkan tekanan dan menambahkan masa hentaman*

- B To increase pressure and decrease impact time

*Untuk menambahkan tekanan dan mengurangkan masa hentaman*

- C To decrease pressure and impact time

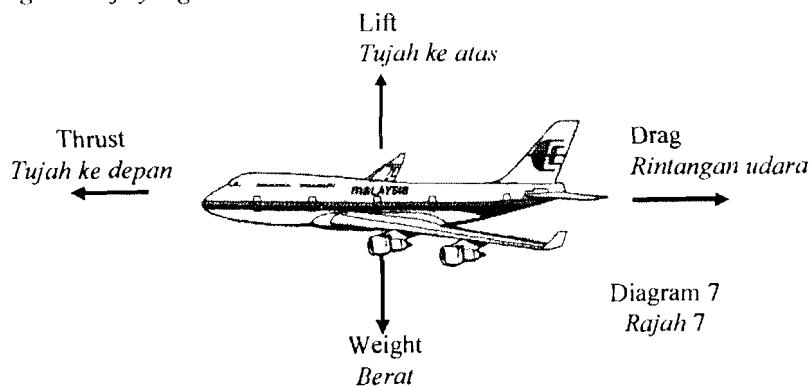
*Untuk mengurangkan tekanan dan masa hentaman*

- D To increase pressure and impact time

*Untuk menambahkan tekanan dan masa hentaman*

- 10 Diagram 7 shows an aeroplane flying horizontally with increasing velocity.

*Rajah 7 menunjukkan sebuah kapal terbang sedang terbang secara mendatar dengan halaju yang bertambah*



Which of the following statement is correct?

*Antara pernyataan berikut, yang manakah betul?*

- A Weight > Lift

*Berat > Tujah ke atas*

- B Lift > Weight

*Tujah > Berat*

- C Drag = Thrust

*Rintangan udara = Tujah ke depan*

- D Thrust > Drag

*Tujah ke depan > Rintangan udara*

- 11 Diagram 8 shows a box being dropped from a helicopter.

*Rajah 8 menunjukkan sebuah kotak dijatuhkan dari sebuah helikopter.*

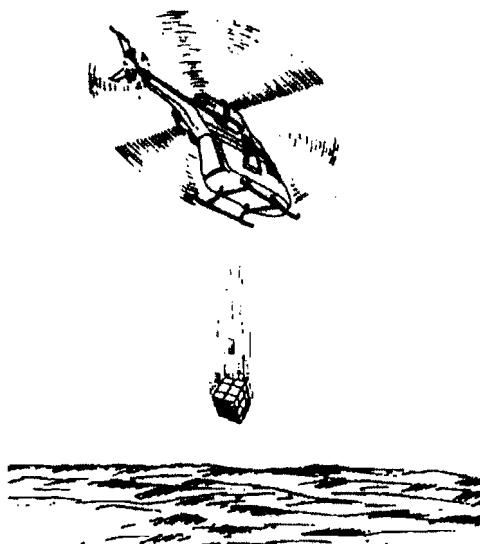


Diagram 8

*Rajah 8*

Which of the following quantities remains unchanged during the fall?

*Antara kuantiti berikut, yang mana tidak berubah semasa dijatuhkan?*

- A Potential energy of the box  
*Tenaga keupayaan kotak.*
- B Velocity of the box  
*Halaju kotak*
- C Acceleration of the box  
*Pecutan kotak*
- D Displacement of the box  
*Sesaran kotak*

- 12 Diagram 9 shows a graph of force,  $F$ , against the extension,  $x$ , for springs R and S.

Rajah 9 menunjukkan graf daya  $F$ , melawan pemanjangan,  $x$ , untuk spring R dan S.

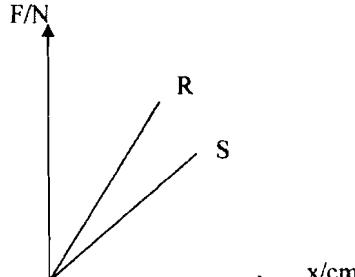


Diagram 9

Rajah 9

What is the conclusion derived from the graph?

Apakah kesimpulan yang diperolehi daripada graf itu?

- A Spring R is longer

Spring R lebih panjang

- B The wire of the coils of spring R is thicker

Wayar gezelung spring R lebih tebal

- C Both spring are made of the same material

Kedua-dua spring diperbuat daripada bahan yang sama

- D The diameter of the coils of spring R is bigger

Diameter gezelung spring R lebih besar

- 13 If the force is decrease while the surface area is kept constant, pressure exerted will

Jika daya dikurangkan manakala luas permukaan dikekalkan, tekanan yang dikenakan akan

- A increases

bertambah

- B decreases

mengurang

- C remains constant

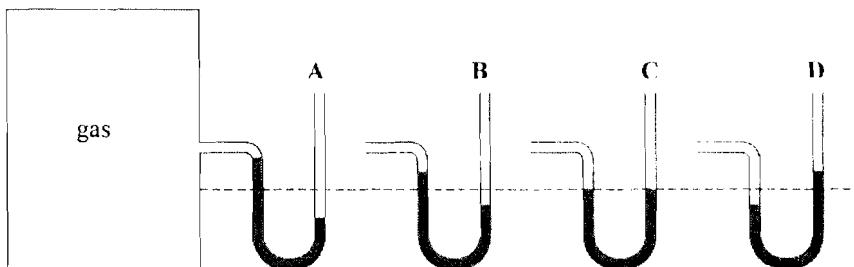
tidak berubah

- 14 A manometer is being used to measure the pressure of the gas inside a tank. A, B, C and D show the situation of the manometer at different times.

*Satu manometer sedang digunakan untuk mengukur tekanan gas dalam sebuah tangki. A, B, C and D menunjukkan keadaan manometer itu pada masa-masa yang berlainan.*

At which time is the gas pressure inside the tank greatest?

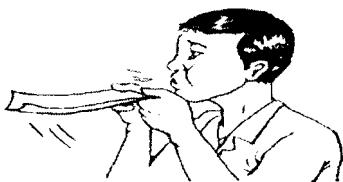
*Pada masa bilakah tekanan gas dalam tangki paling besar?*



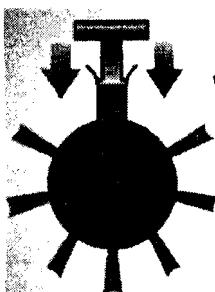
- 15 Which of the following situations obeys Pascal's principle?

*Antara situasi berikut, yang manakah mematuhi prinsip Pascal?*

A



B



C



D



MOZ@C

- 16 Diagram 10 shows a man on a boat.

Rajah 10 menunjukkan seorang lelaki dalam sebuah sampan.



Diagram 10

Rajah 10

Which of the following statements is correct?

Antara pernyataan berikut, yang manakah betul?

- A Weight of the water displaced = Weight of the man + Weight of the boat  
*Berat air tersesar = Berat lelaki + Berat sampan*
- B Weight of the water displaced + Weight of the man = Weight of the boat  
*Berat air tersesar + Berat lelaki = Berat sampan*
- C Weight of water displaced + Weight of the boat = Weight of the man  
*Berat air tersesar + Berat sampan = Berat lelaki*
- D Weight of the water displaced = Weight of the boat – Weight of the man  
*Berat air tersesar = Berat sampan – Berat lelaki*

- 17 Diagram 11 shows a stationary lorry and a moving lorry.

Rajah 11 menunjukkan sebuah lori pegun dan sebuah lori yang sedang bergerak.

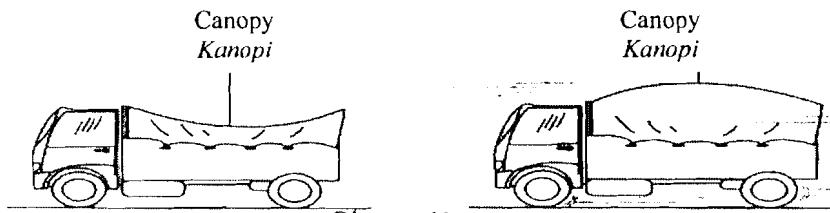


Diagram 11

Rajah 11

Which principle explains the situation above?

Prinsip yang manakah menerangkan situasi di atas?

- A Archimedes
- B Bernoulli
- C Pascal

- 18** Diagram 12 shows two metal blocks touching each other.

*Rajah 12 menunjukkan dua blok logam menyentuh satu sama lain.*

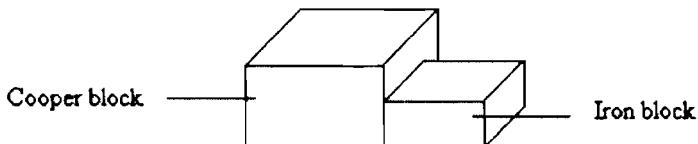


Diagram 12

*Rajah 12*

Thermal equilibrium is reached when both of them have the same

*Keseimbangan terma tercapai apabila kedua-duanya sama*

- A** mass  
*jisim*
- B** density  
*ketumpatan*
- C** volume  
*isipadu*
- D** temperature  
*suhu*

- 19** The specific heat capacity of aluminium is  $1200 \text{ J kg}^{-1}\text{C}^{-1}$ .

*Muatan haba tentu bagi aluminium ialah  $1200 \text{ J kg}^{-1}\text{C}^{-1}$ .*

Calculate the heat energy required to raise the temperature of 2 kg of aluminium by  $10^\circ\text{C}$ ?

*Hitung tenaga haba yang diperlukan untuk menaikkan suhu 2 kg aluminium sebanyak  $10^\circ\text{C}$ .*

- A** 1 200 J
- B** 2 400 J
- C** 12 000 J
- D** 24 000 J

- 20 Diagram 13 shows a process in which water is changed to steam.

Rajah 13 menunjukkan proses di mana air bertukar kepada stim.



Diagram 13

Rajah 13

The heat absorbed during the process is called

Haba yang diserap semasa proses ini dikenali sebagai

- A specific heat capacity  
*muatan haba tetu*
- B latent heat of fusion  
*haba pendam pelakuran*
- C latent heat of vaporisation  
*haba pendam pengewapan*
- D latent heat of condensation  
*haba pendam kondensasi*

- 21 Diagram 14 shows the condition of the air bubbles releases by a diver.

Rajah 14 menunjukkan keadaan gelembung-gelembung udara yang dilepaskan oleh seorang penyelam.

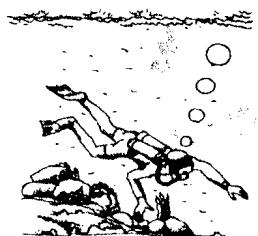


Diagram 14

Rajah 14

The above situation can be explained by

Situasi di atas dapat diterangkan oleh

- A pressure law  
*hukum tekanan*
- B Boyle's law  
*hukum Boyle*
- C Charles's law  
*hukum Charles*

MOZ@C

- 22 Diagram 15 shows the path of light from P to O.

Rajah 15 menunjukkan lintasan cahaya dari P ke O.

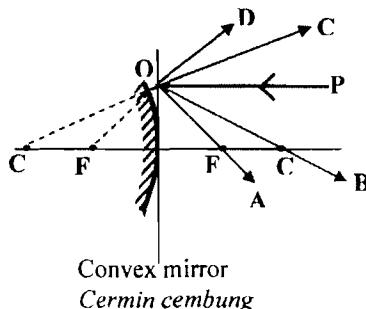


Diagram 15

Rajah 15

Which is the correct reflected ray from the convex mirror?

Sinar pantulan yang manakah betul dari cermin cembung itu?

- 23 Diagram 16 shows an observer looking at a fish swimming in a pond.

Rajah 16 menunjukkan seorang pemerhati sedang melihat seekor ikan berenang dalam sebuah kolam.

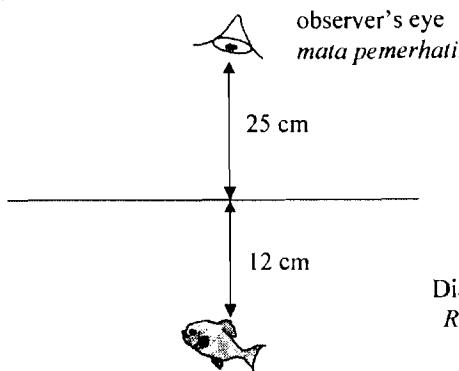


Diagram 16  
Rajah 16

The refractive index of the water is  $\frac{4}{3}$ . What is the distance between the observer and the image of the fish?

Indek biasan air ialah  $\frac{4}{3}$ . Berapakah jarak antara pemerhati dengan imej ikan itu?

A 25 cm

B 34 cm

C 37 cm

D 41 cm  
MOZ@C

- 24 Diagram 17 shows a fibre optic.

Rajah 17 menunjukkan satu gentian optik.

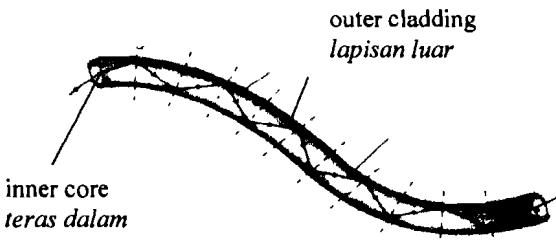


Diagram 17  
Rajah 17

Which of the following statements is correct?

Antara pernyataan berikut, yang manakah betul?

- A Refractive index of outer cladding = Refractive index of inner core

*Indeks biasan lapisan luar = Indeks biasan teras dalam*

- B Refractive index of outer cladding > Refractive index of inner core

*Indeks biasan lapisan luar > Indeks biasan teras dalam*

- C Refractive index of outer cladding < Refractive index of inner core

*Indeks biasan lapisan luar < Indeks biasan teras dalam*

- 25 Where should the object be placed in front of a convex lens for it to act as a magnifying glass? The focal length of the convex lens is  $f$ .

*Di manakah satu objek harus diletak di depan satu kanta cembung supaya ia bertindak sebagai kanta pembesar? Jarak fokus kanta cembung itu ialah  $f$ .*

- A less than  $f$

*kurang daripada  $f$*

- B between  $f$  and  $2f$

*antara  $f$  dan  $2f$*

- C equal to  $2f$

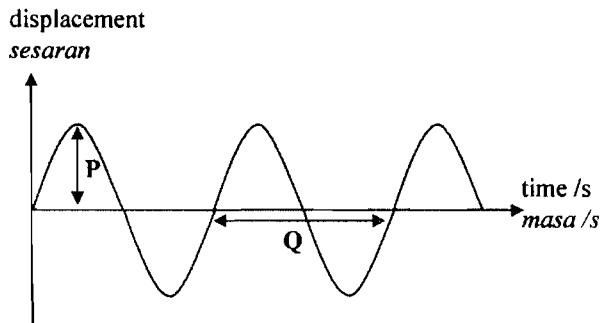
*sama dengan  $2f$*

- D more than  $2f$

*lebih daripada  $2f$*

**26** Diagram 18 shows a graph of wave motion.

*Rajah 18 menunjukkan satu graf perambatan gelombang.*



**Diagram 18**

*Rajah 18*

Which quantities are shown by distances P and Q?

*Apakah kuantiti yang ditunjukkan oleh jarak P dan Q?*

	P	Q
A	amplitude <i>amplitud</i>	period <i>tempoh</i>
B	amplitude <i>amplitud</i>	wavelength <i>jarak gelombang</i>
C	wavelength <i>jarak gelombang</i>	period <i>tempoh</i>
D	wavelength <i>jarak gelombang</i>	frequency <i>frekuensi</i>

- 27 Diagram 19 shows a sound wave reflected from a barrier. Compare with the incident wave, the reflected wave has

Rajah 19 menunjukkan satu gelombang bunyi dipantulkan daripada satu penghalang. Berbanding dengan gelombang tuju, gelombang terpantul mempunyai

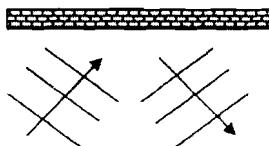


Diagram 19  
Rajah 19

- A a smaller velocity                          B the same frequency  
*halaju yang lebih kecil*                          *frekuensi yang sama*  
C a bigger amplitude                              D a shorter wavelength  
*amplitud yang lebih besar*                          *jarak gelombang yang lebih pendek*

- 28 Diagram 20 shows a water wave in a ripple tank.

Rajah 20 menunjukkan suatu gelombang air dalam tangki riak.

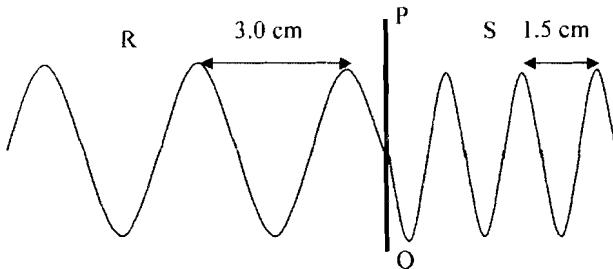


Diagram 20  
Rajah 20

The wave has a speed of  $24 \text{ cm s}^{-1}$  at R.

The wave crosses a boundary PQ where the distance between the crests changes from 3.0 cm to 1.5 cm.

Gelombang itu mempunyai halaju  $24 \text{ cm s}^{-1}$  di R.

Gelombang itu melepas sempadan PQ di mana jarak antara puncak-puncak berubah dari 3.0 cm ke 1.5 cm.

What is the frequency of the wave at point S?

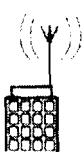
Berapakah frekuensi gelombang itu pada titik S?

- A 2.0 Hz    B 4.5 Hz  
C 8.0 Hz    D 12.0 Hz

MOZ@C

- 29 Diagram 21 shows radio waves being received at a house at the bottom of a hill.

Rajah 21 menunjukkan gelombang radio sedang diterima oleh sebuah rumah di kaki bukit.



Radio station  
Stesen Radio

Diagram 21  
Rajah 21

This phenomenon is due to

Fenomena ini disebabkan oleh

- |                                  |                                |
|----------------------------------|--------------------------------|
| A reflection                     | B refraction                   |
| <pantulan< p=""></pantulan<>     | <pembiasan< p=""></pembiasan<> |
| C diffraction                    | D interference                 |
| <pembelauan< p=""></pembelauan<> | <interferen></interferen>      |

- 30 Diagram 22 shows the interference pattern of water waves from two coherent sources  $S_1$  and  $S_2$  in a ripple tank.

Rajah 22 menunjukkan corak interferen gelombang air dari dua sumber koheren  $S_1$  dan  $S_2$  dalam sebuah tangki riak.

Which of the following points has minimum amplitude?

Antara titik-titik berikut, yang manakah mempunyai amplitud minimum?

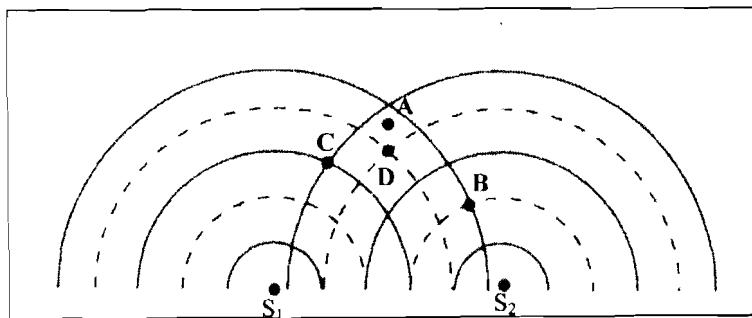


Diagram 22  
Rajah 22

- 31 Diagram 23 shows a climber starting a stopwatch as he shouts. An echo is heard after 1.5 s. Velocity of sound is  $340 \text{ m s}^{-1}$ .

Rajah 23 menunjukkan seorang pendaki memulakan jam randik sambil menjerit. Gema terdengar selepas 1.5 s. Halaju bunyi ialah  $340 \text{ m s}^{-1}$ .

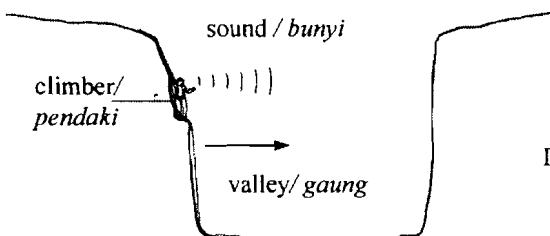


Diagram 23  
Rajah 23

What is the width of the valley?

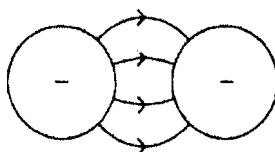
Berapakah lebar gaung itu?

- A 170 m
- B 255 m
- C 340 m
- D 510 m

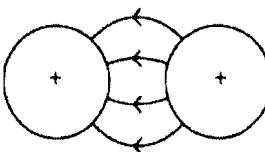
- 32 Which of the following diagrams show the electric field correctly?

Antara rajah berikut, yang manakah menunjukkan dengan betul medan elektrik itu?

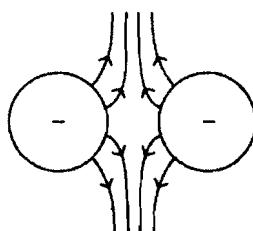
A



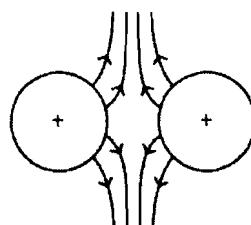
B



C



D



- 33 Diagram 24 shows a constantan sheet.

In which direction should the current flows, when the resistance of the sheet is the smallest?

Rajah 24 menunjukkan satu kepingan konstantan.

Dalam arah manakah, arus harus mengalir apabila rintangan kepingan itu adalah paling rendah?

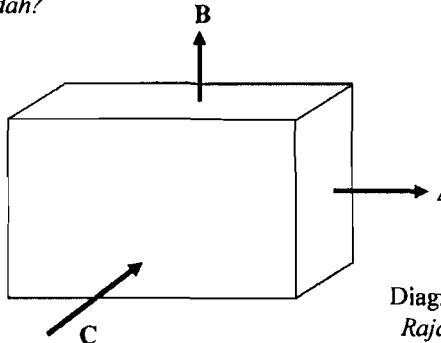


Diagram 24  
Rajah 24

- 34 Diagram 25 shows an electric circuit.

Rajah 25 menunjukkan satu litar elektrik.

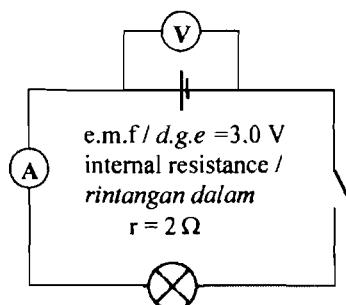


Diagram 25  
Rajah 25

What is the reading of the voltmeter when the switch is opened?

Apakah bacaan voltmeter bila suis dibuka?

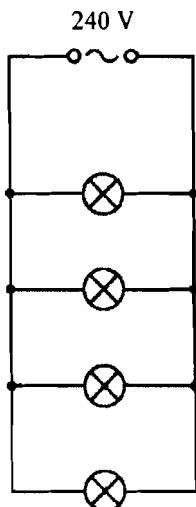
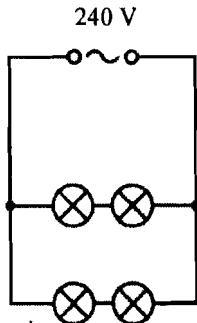
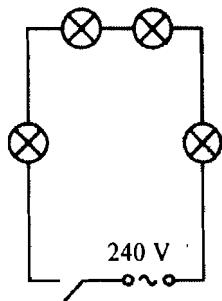
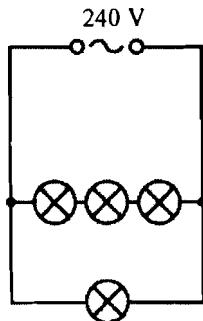
- A zero
- B 3.0 V
- C less than 3.0 V
- D more than 3.0 V

- 35 Four bulbs are labelled '80 W 240 V'.

*Empat mentol dilabelkan '80 W 240 V'*

In which circuit are all the bulbs lighted at normal brightness?

*Dalam litar manakah, semua mentol dinyalakan pada kecerahan normal?*

**A****B****C****D**

- 36** Which of the following electrical appliances consumed the most energy?

*Antara alatan elektrik berikut yang manakah menggunakan paling banyak tenaga?*

**A**

Blender  
240 V 300 W  
10 minutes  
*Blender*  
240 V 300 W  
10 minit

**B**

Kettle  
240 V 600 W  
15 minutes  
*Cerek*  
240V 600 W  
15 minit

**C**

Fan  
240 V 200 W  
3 hours  
*Kipas*  
240 V 200 W  
3 jam

**D**

Oven  
240 V 1500W  
20 minutes  
*Ketuhar*  
240V 1500W  
20 minit

- 37** Diagram 26 shows a simple electromagnet.

*Rajah 26 menunjukkan satu elektromagnet ringkas.*

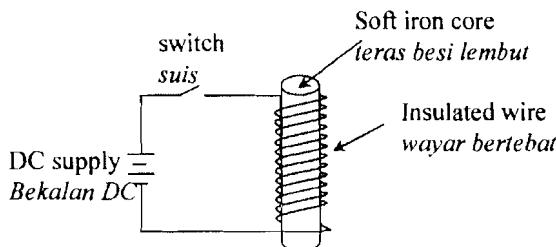


Diagram 26  
*Rajah 26*

What changes should be done to increase the strength of the electromagnet?

*Apakah perubahan yang perlu dilakukan untuk meningkatkan kekuatan elektromagnet?*

- A** remove the soft iron core  
*keluarkan teras besi lembut*
- B** decrease the number of coils  
*kurangkan bilangan gegelung*
- C** increase the number of battery  
*tingkatkan bilangan bateri*
- D** decrease the diameter of the wire  
*kurangkan diameter wayar* MOZ@C

- 38 Diagram 27 shows a wire suspended between the poles of two magnets.

Rajah 27 menunjukkan satu wayar yang tergantung antara kutub-kutub dua magnet.

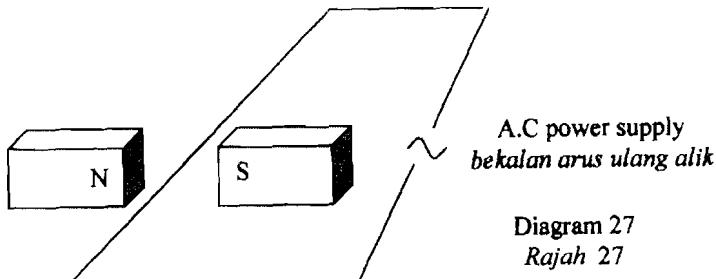


Diagram 27

Rajah 27

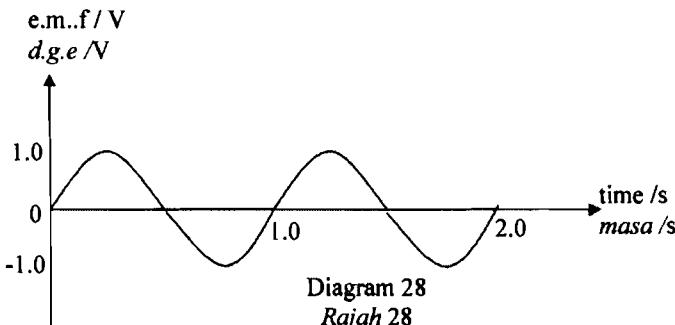
Which direction will the wire move?

Ke arah manakah wayar itu akan bergerak?

- A up only  
*atas sahaja*
- B right only  
*kanan sahaja*
- C up and down  
*atas dan bawah*
- D left and right  
*kiri dan kanan*

- 39 Diagram 28 shows an alternating e.m.f. produced by a simple a.c. generator.

Rajah 28 menunjukkan d.g.e ulang alik yang dihasilkan oleh penjana a.u yang ringkas.

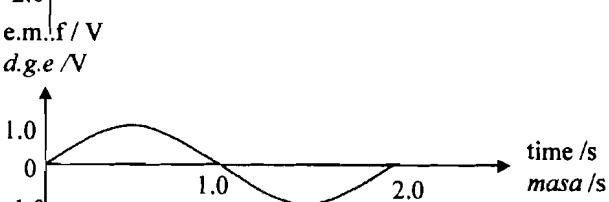
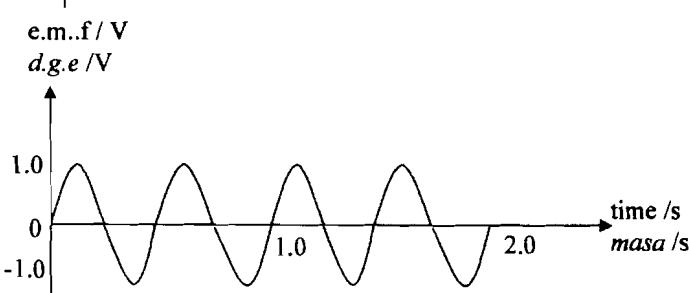
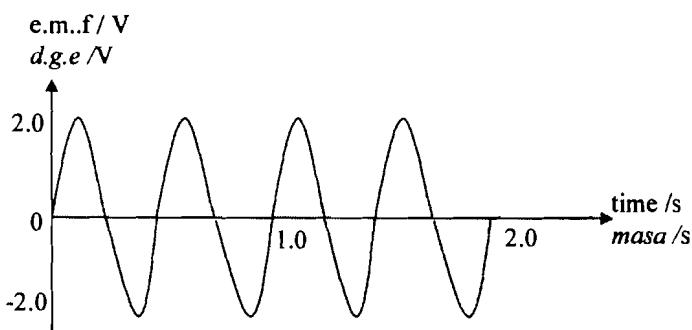


The speed of the generator is then doubled.

Kelajuan penjana kemudian digandakan.

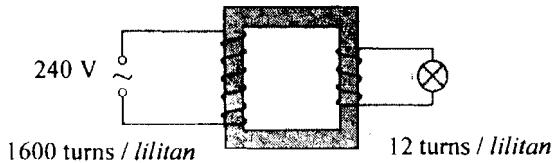
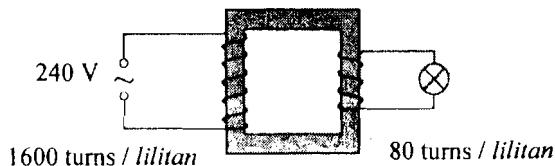
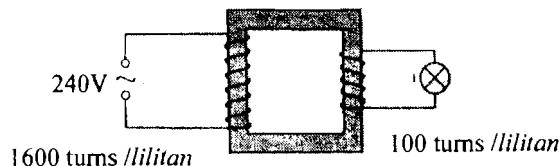
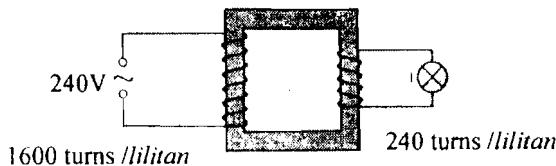
Which of the following graphs best represents the new output?

Antara graf berikut, yang manakah paling sesuai mewakili output yang baru?

**A****B****C****D**

- 40** Which of the following transformers will light up the 12 V bulb at its normal brightness?

*Antara transformer berikut, yang manakah akan menyalaikan mentol 12 V pada kecerahan normal?*

**A****B****C****D**

- 41 The advantage of an alternating current supply is that

*Kelebihan bekalan arus ulang alik ialah*

- A alternating current is easier to generate

*arus ulang alik lebih mudah dijana*

- B the voltage of the alternating current can be changed easily

*voltan arus ulang alik boleh diubah dengan mudah*

- C the frequency of the alternating current can be changed easily

*the frekuensi arus ulang alik boleh diubah dengan mudah*

- D the power of the supply can be maintained at a constant value

*kuasa bekalan boleh dikekalkan pada satu nilai yang tetap*

- 42 Diagram 29 shows two identical bulbs X and Y which will light up with the same brightness when the switch is turned off.

*Rajah 29 menunjukkan dua mentol serupa X dan Y yang akan bernyala dengan kecerahan yang sama bila suis dimatikan.*

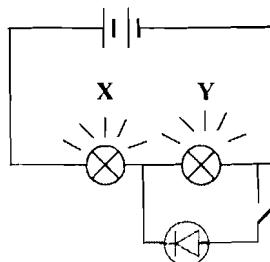


Diagram 29  
*Rajah 29*

What will happen to the bulbs X and Y if the switch is on?

*Apa yang akan berlaku kepada mentol-mentol X dan Y jika suis itu dihidupkan?*

- A no changes

*tiada perubahan*

- B X is brighter than Y

*X lebih terang dari Y*

- C X is dimmer than Y

*X lebih malap dari Y*

- 43 Diagram 30 shows an automatic switch circuit to light up a bulb at night.

Rajah 30 menunjukkan litar suis automatic untuk menyalaikan mentol pada waktu malam.

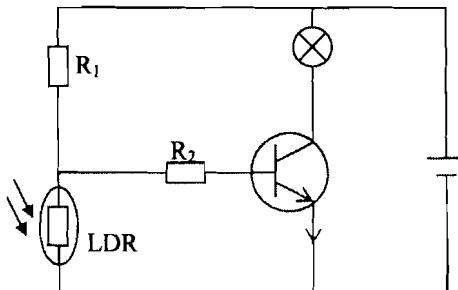


Diagram 30  
Rajah 30

The functions of  $R_1$  and  $R_2$  are

Fungsi  $R_1$  dan  $R_2$  ialah

	<u><math>R_1</math></u>	<u><math>R_2</math></u>
A	to limit base current <i>menghadkan arus tapak</i>	to limit collector current <i>menghadkan arus pengumpul</i>
B	as a voltage divider <i>sebagai pembahagi voltan</i>	to limit base current <i>menghadkan arus tapak</i>
C	as a voltage divider <i>sebagai pembahagi voltan</i>	to limit collector current <i>menghadkan arus pengumpul</i>
D	to limit base current <i>menghadkan arus tapak</i>	as a voltage divider <i>sebagai pembahagi voltan</i>

- 44 The truth table for two logic gates P and Q are as shown.

*Jadual kebenaran bagi dua get logik P dan Q adalah seperti ditunjukkan.*

Truth table of logic gates /  
*Jadual kebenaran get logik*

P	Q
Input	Output
0	0
0	1
1	0
1	1

Output of logic gate P is connected to the input of logic gate Q. This combination form a

*Output get logik P disambungkan kepada input get logik Q. Kombinasi ini menghasilkan*

- A OR gate  
*get ATAU*
- B NOR gate  
*get TAKATAU*
- C AND gate  
*get DAN*
- D NAND gate  
*get TAKDAN*

45 Diagram 31 shows a logic gate circuit with input signals X and Y.

Rajah 31 menunjukkan satu litar get logik dengan signal input X dan Y.

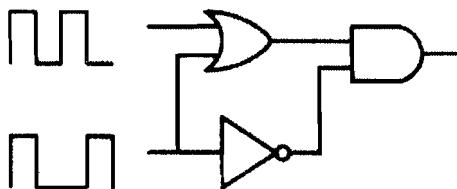
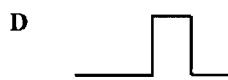
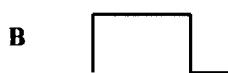


Diagram 31

Rajah 31

Which output signal is produced by the logic circuit?

Yang manakah signal output yang dihasilkan oleh litar logik ini?



- 46 Atom P and Q are isotopes.

*Atom P dan Q adalah isotop.*

Which of the following comparison between atom P and atom Q is true?

*Antara perbandingan berikut antara atom P dan atom Q, yang manakah benar?*

	Number of neutrons <i>Bilangan neutron</i>	Number of electrons <i>Bilangan electron</i>	Number of protons <i>Bilangan proton</i>
A	same <i>sama</i>	same <i>sama</i>	different <i>berbeza</i>
B	different <i>berbeza</i>	different <i>berbeza</i>	different <i>berbeza</i>
C	different <i>berbeza</i>	same <i>sama</i>	same <i>sama</i>
D	same <i>sama</i>	same <i>sama</i>	same <i>sama</i>

- 47 Diagram 32 shows the radioactivity decay graph for a radioactive material.  
*Rajah 32 menunjukkan graf pereputan radioaktif bagi satu bahan radioaktif.*

Radioactivity (count rate / s)  
*Keradioaktifan (kadar kiraan / s)*

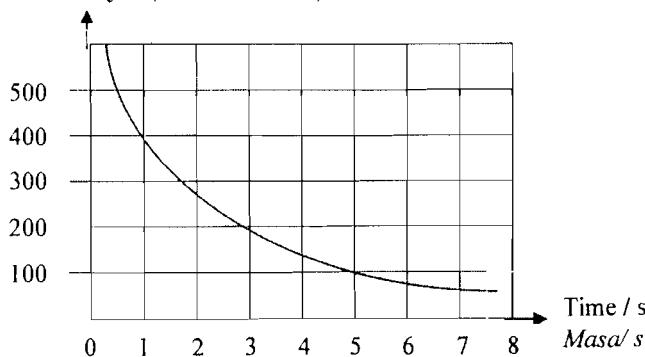


Diagram 32  
*Rajah 32*

What is the half-life of the radioactive material?

*Apakah separuh hayat bahan radioaktif itu?*

A 1.0 s

B 2.0 s

C 2.5 s

D 5.0 s

MOZ@C

- 48 Diagram 33 shows a radioactive source in front of a Geiger-Muller tube. Without any absorber the average count rate is 742 counts/minute.

*Rajah 33 menunjukkan satu sumber radioaktif di hadapan tiub Geiger-Muller. Tanpa penyerap kadar kiraan purata ialah 742 kiraan/ minit.*

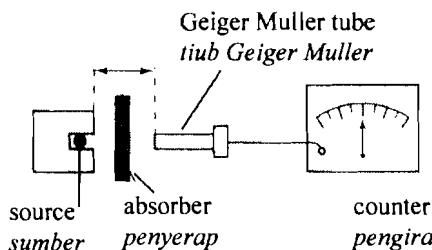


Diagram 33  
Rajah 33

Then absorber of different materials is placed between the source and the tube. The results are recorded in the table below.

*Kemudian penyerap daripada bahan yang berlainan diletakkan di antara sumber dengan tiub. Keputusannya direkodkan dalam jadual di bawah.*

Material of absorber <i>Bahan penyerap</i>	thin card <i>/kad nipis</i>	aluminium foil / <i>foil aluminium</i>	thick lead / <i>plumbum tebal</i>
average count rate / counts per minute <i>kadar kiraan purata / bilangan per minit</i>	740	450	103

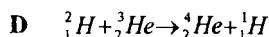
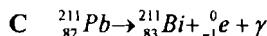
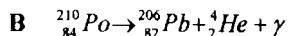
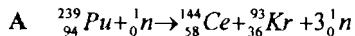
What type of radiation does the source emit?

*Apakah jenis radiasi yang dipancarkan oleh sumber?*

- A alpha and beta only  
*alfa dan beta sahaja*
- B alpha and gamma only  
*alfa dan gama sahaja*
- C beta and gamma only  
*beta dan gama sahaja*
- D alpha, beta and gamma  
*alfa, beta dan gama*

- 49** Which of the following nuclear reactions is an example of fusion?

*Antara tindakbalas nuklear berikut, yang manakah contoh perlakuran nuklear?*



- 50** In a nuclear reactor, the rate of the chain reaction is controlled by

*Dalam sebuah reaktor nuklear, kadar tindakbalas berantai dikawal oleh*

A uranium rods

*rod-rod uranium*

B boron rods

*rod-rod boron*

C graphite core

*teras grafit*

D concrete shield

*pengadang konkrit*

**END OF QUESTION PAPER**

**KERTAS SOALAN TAMAT**

## Answers for paper 1 Physics 2008

1 D	11 C	21 B	31 B	41 B
2 A	12 B	22 D	32 D	42 A
3 C	13 B	23 B	33 C	43 B
4 D	14 D	24 C	34 B	44 D
5 B	15 B	25 A	35 A	45 D
6 A	16 A	26 A	36 C	46 C
7 A	17 B	27 B	37 C	47 B
8 D	18 D	28 C	38 C	48 C
9 A	19 D	29 C	39 D	49 D
10 D	20 C	30 B	40 B	50 B