Nama

Tingkatan

4531/1
Fizik
Kertas 1
Percubaan
SPM
September
2008
1¼ hours

PEPERIKSAAN PERCUBAAN
SIJIL PELAJARAN MALAYSIA
NEGERI PERAK
2008

FIZIK 1

Kertas 1

Satu jam lima belas minit

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU

1. Kertas ini adalah dalam **DWIBAHASA.**
2. Soalan dalam Bahasa Inggeris mendahului soalan yang sepadan dengan Bahasa Malaysia
3. Calon dikehendaki membaca maklumat di halaman 2.

Kertas soalan ini mengandungi 24 halaman bercetak.

1. $a = \frac{v-u}{t}$
2. $v^2 = u^2 + 2as$
3. $s = ut + \frac{1}{2} at^2$
4. Momentum $= mv$
5. $F = ma$
6. Kinetic energy $= \frac{1}{2} mv^2$
7. Gravitational potential energy $= mgh$
8. Elastic potential energy $= \frac{1}{2} Fx$
9. Power, $P = \frac{energy}{time}$
10. $\rho = \frac{m}{V}$
11. Pressure, $p = \frac{F}{A}$
12. Pressure, $p = h\rho g$
13. Heat, $Q = mc\theta$
14. Heat, $Q = ml$
15. $P_1V_1 = P_2V_2$
16. $\frac{V_1}{T_1} = \frac{V_2}{T_2}$
17. $\frac{P_1}{T_1} = \frac{P_2}{T_2}$
18. $\frac{PV}{T} =$ constant
19. $n = \frac{Sini}{Sinr}$
20. $n = \frac{real\ depth}{apparent\ depth}$
21. $\frac{1}{f} = \frac{1}{u} + \frac{1}{v}$
22. Linear magification, $m = \frac{v}{u}$
23. $P = \frac{1}{f}$
24. $v = f\lambda$
25. $\lambda = \frac{ax}{D}$
26. $n\lambda = d \operatorname{Sin} \theta_n$
27. $Q = It$
28. $E = VQ$
29. $V = IR$
30. $E = V + Ir$
31. Power, $P = IV$
32. $I_{rms} = \frac{I_{peak}}{\sqrt{2}}$
33. $V_{rms} = \frac{V_{peak}}{\sqrt{2}}$
34. $\frac{N_s}{N_p} = \frac{V_s}{V_p}$
35. Efficiency $= \frac{I_sV_s}{I_pV_p} \times 100\%$
36. $eV = \frac{1}{2} mv^2$
37. $E = mc^2$
38. $g = 10\ ms^{-2}$

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

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

1. Which of the following values is equal to 500 MW?
Antara yang berikut yang manakah sama dengan 500 MW?

A 5.0×10^{8} W
B 5.0×10^{6} W
C 5.0×10^{-8} W
D 5.0×10^{-6} W

2 Which of the following physical quantities is **not** a base quantity?
Antara kuantiti fizikal berikut yang manakah bukan kuantiti asas?

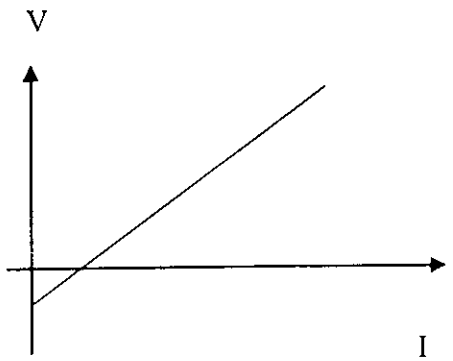
A Time / *Masa*
B Velocity *Halaju*
C Temperature / *Suhu*
D Electric current / *Arus Elektrik*

3 Which of the followings is a scalar quantity?
Antara yang berikut yang manakah kuantiti skalar?

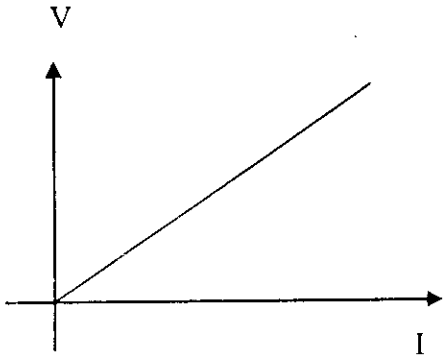
A Work / *kerja*
B Displacement / *Sesaran*
C Force / *Daya*
D Momentum / *Momentum*

4 Which of the following graph obeys the equation V = I R where R is a constant?.
Antara graf yang berikut yang manakah mematuhi persamaan V= I R dimana R adalah pemalar?

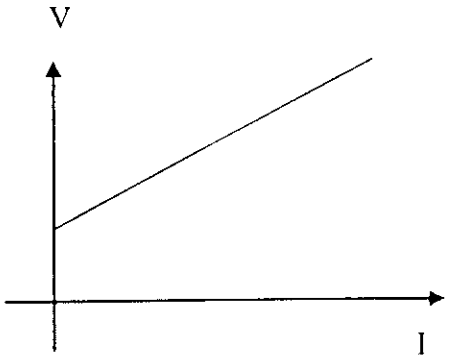
A



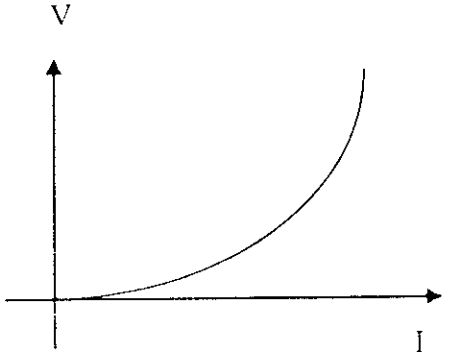
B



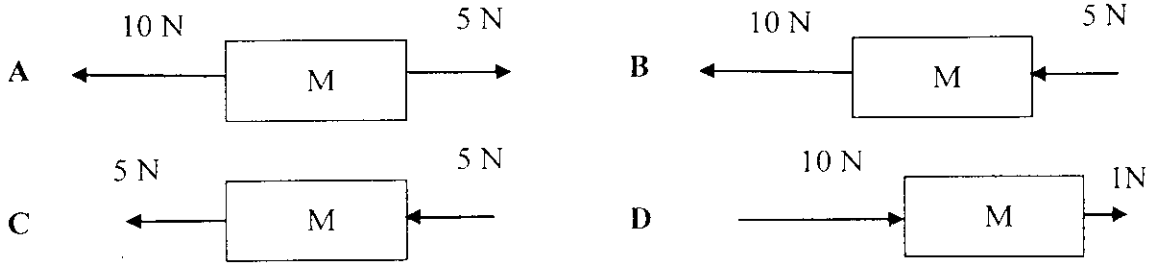
C



D



5 Diagrams below show two forces acting on a wooden block with mass M.
Which block has the smallest acceleration?
Rajah menunjukkan daya bertindak pada bongkah kayu berjisim M.
Bongkah manakah yang mempunyai nilai pecutan paling kecil.



6 Which of the followings correctly matched momentum, mass and velocity?
Manakah yang berikut sepadan dengan momentum, jisim dan halaju?

	Momentum	Mass / *Jisim*	Velocity / *Halaju*
A	Scalar / *Skalar*	Scalar / *Skalar*	Scalar / *Skalar*
B	Vector / *Vektor*	Scalar / *Skalar*	Vector / *Vektor*
C	Vector / *Vektor*	Vector / *Vektor*	Scalar / *Skalar*
D	Scalar / *Skalar*	Vector / *Vektor*	Scalar / *Skalar*

7 A car travels with a constant velocity of 12 ms^{-1} for 10 s. What is the acceleration of the car?
Sebuah kereta bergerak dengan kelajuan seragam 12 ms^{-1} selama 10 s. Berapakah pecutan kereta tersebut?

A 0 ms^{-2}
B 1.2 ms^{-2}
C 12.0 ms^{-2}
D 120.0 ms^{-2}

8. Diagram 1 shows two forces 4.0 N and 5.0 N act on a smali body B. The angle between the forces is 45°
Rajah 1 menunjukkan dua daya 4.0 N dan 5.0 N bertindak pada satu jasad kecil. Sudut diantara daya ialah 45°

Scale : 1cm : 1N
Skala : 1cm : 1N

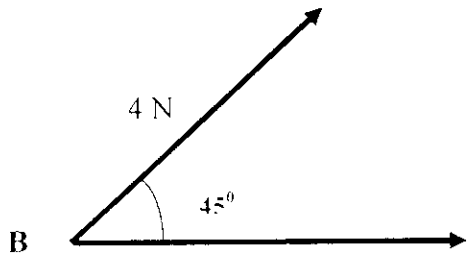


Diagram 1
Rajah 1

Determine the magnitude of the resultant force on the body.
Tentukan magnitud daya paduan ke atas jasad.

A 6.3 N
B 7.6 N
C 8.3 N
D 9.1 N

9 Diagram 2 shows 4 identical strings used to hang a lamp.
Rajah 2 menunjukkan 4 tali serupa digunakan untuk menggantung sebuah lampu

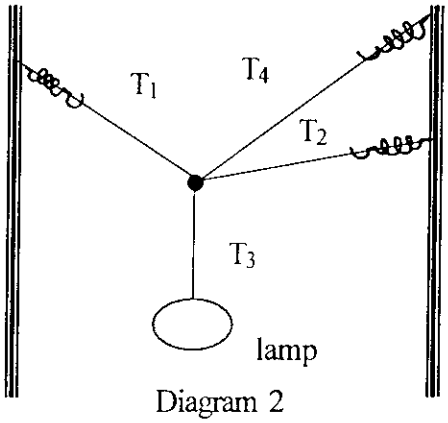


Diagram 2
Rajah 2

Which of the following has the highest tension?
Manakah yang berikut mempunyai ketegangan yang paling besar?

A T_1
B T_2
C T_3
D T_4

10. Diagram 3 shows a boy is walking forward with a load.
Rajah 3 menunjukkan seorang kanak-kanak berjalan ke hadapan dengan membawa beban.

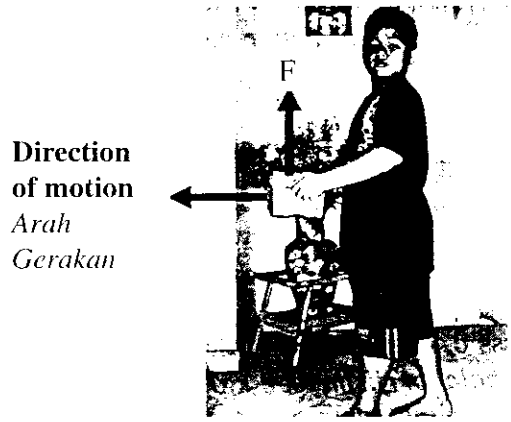


Diagram 3
Rajah 3

Based on Diagram 3, which of the following statement is **false**?
Berdasarkan Rajah 3, manakah pernyataan di bawah tidak benar?

A No work is done by the upward force **F**.
*Tiada kerja dilakukan oleh arah daya **F**.*

B Work is only done when the load is moved upward.
Kerja cuma dilakukan jika beban digerakkan ke atas.

C If the load falls vertically, its kinetic energy will increase.
Jika beban jatuh ke bawah, tenaga kinitik bertambah.

D The work done by the boy is equal to **F** multiply with displacement in the direction of the motion shown.
Kerja yang dilakukan oleh kanak tersebut adalah F darab jarak yang ditunjukkan seperti dalam rajah.

11. The potential energy of an object depends on all of the followings **except**
Tenaga keupayaan sesuatu objek bergantung kepada semua yang berikut ***kecuali***

A the mass of an object
Jisim objek

B the acceleration due to gravity
Pecutan graviti

C the velocity of an object
Halaju objek

D the height of an object.
Ketinggian objek

12 Diagram 4 shows a trolley is moving down on a friction compensated runway.
Rajah 4 menunjukkan sebuah troli yang bergerak pada satu landasan terpampas geseren

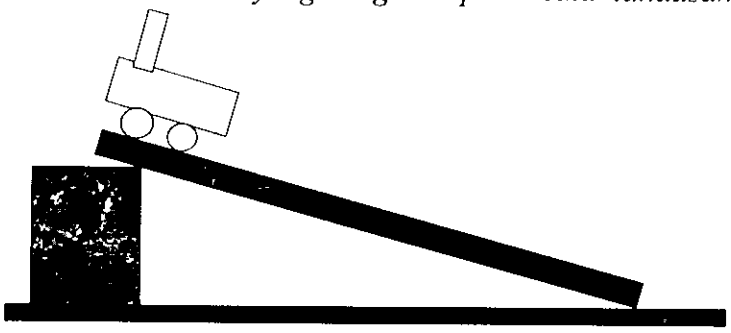


Diagram 4
Rajah 4

Which of the following statement is **true** about the motion of the trolley?
Kenyataan manakah yang berikut adalah ***benar*** *mengenai troli?*

A It moves with acceleration.
Ia bergerak dengan pecutan

B It moves with constant velocity
Ia bergerak dengan halaju malar

C It remains stationary.
Ia berkeadaan pegun

13 Diagram 5 shows a ball of mass 0.4 kg hits a wall elastically and rebounds along its original path
Rajah 5 menunjukan sebiji bola berjisim 0.4 kg menghentam dinding secara kenyal dan melantun semula pada lintasan yang sama.

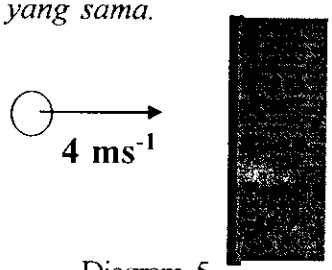
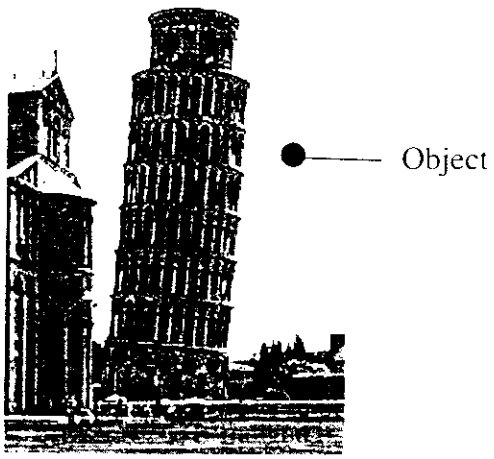


Diagram 5
Rajah 5

What is the change of momentum of the ball?
Berapakah perubahan momentum bola tersebut?

A 3.2 kgms^{-1}
B 1.6 kgms^{-1}
C 0.4 kgms^{-1}
D 0 kgms^{-1}

14 The photograph shows a huge object is falling down from the leaning tower of PISA.
Gambarfoto menunjukkan satu objek besar jatuh dari menara condong PISA.



Which physical quantity of the object remains **constant** while it is falling?
*Kuantiti fizik yang manakah **malar** ketika objek itu sedang jatuh?*

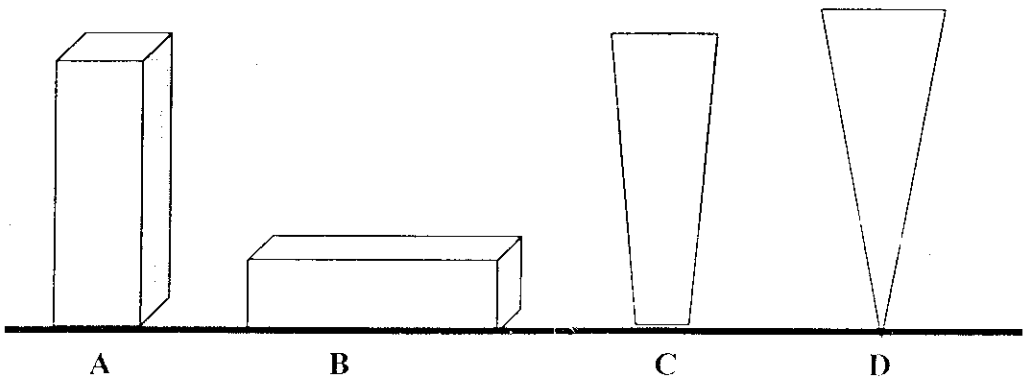
A Momentum
Jisim

B Kinetic energy
Tenaga kinetik

C Acceleration
Pecutan

D Potential energy
Tenaga keupayaan

15 Which of the following wooden rod exerts the **highest** pressure on the floor?
Each rod has the same mass.
*Manakah antara rod kayu berikut mengenakan tekanan yang **paling besar** terhadap lantai?*
Setiap rod mempunyai jisim yang sama.



16 Diagram 6 shows a cylinder which is placed at a depth of 4 m below the water surface.
Rajah 6 menunjukkan satu silinder berada pada kedalaman 4 m dari permukaan air.

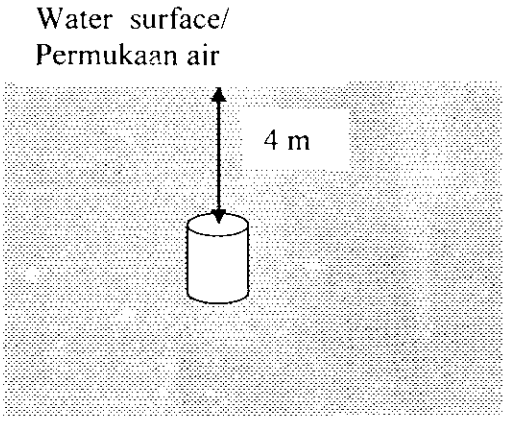


Diagram 6
Rajah 6

What is the pressure exerted by the water on the cylinder?
(Density of Water / *Ketumpatan air* = 1000 kg m^{-3})
Berapakah tekanan yang dikenakan oleh air terhadap silinder?

A 4×10^4 Pa
B 4×10^3 Pa
C 4×10^{-4} Pa
D 4×10^{-3} Pa

17 Diagram 7 shows water in the container.
When the piston is pushed downwards, the water levels rise.
Rajah 7 menunjukkan air berada dalam satu bekas.
Apabila omboh ditekan kebawah, paras air naik.

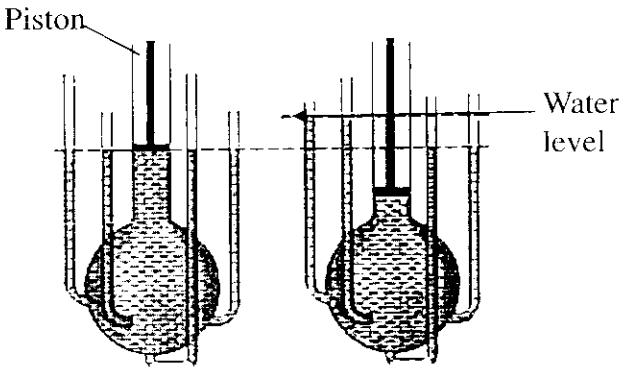


Diagram 7
Rajah 7

Which physics principle explains the situation above?
Manakah prinsip fizik yang menerangkan situasi di atas?

A Pascal
B Bernoulli
C Archimedes
D Boyle

18 Diagram 8 shows two identical pingpong balls.
Rajah 8 menunjukkan dua bola pimpong yang serupa.

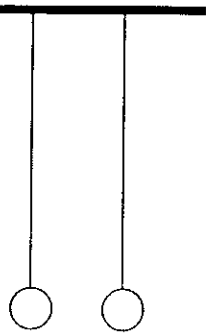


Diagram 8
Rajah 8

What happens when the air is blown in between the balls?
Apakah yang berlaku bila udara ditiup di antara kedua bola?

A The distance between the ball remains constant
Jarak antara bola tetap

B The balls oscillate in different direction
Bola akan berayun pada arah bertentangan

C The balls get closer to each other
Bola akan menghampiri antara satu sama lain

D The balls spin
Bola akan berpusing.

19 Diagram 9 shows a glass tube filled with lead shot floats vertically in water.
Rajah 9 menunjukkan sebuah tiub kaca yang mengandungi butir-butir plumbun terapung menegak di dalam air.

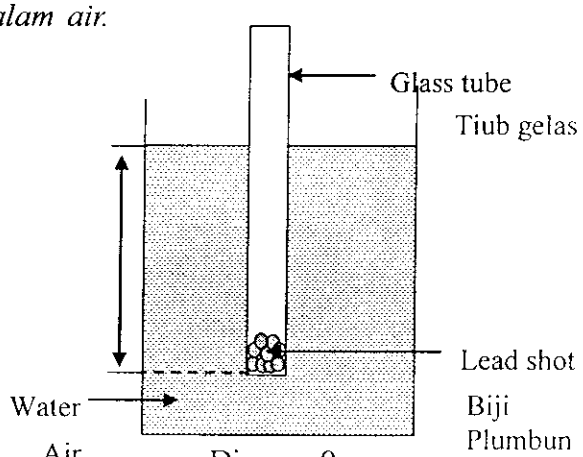


Diagram 9
Rajah 9

Which of the following statements is correct?
Manakah kenyataan berikut benar?

A Weight of glass tube and lead shot = Weight of the water displaced
Berat tiub kaca dan biji plumbum = Berat air yang disesarkan

B Volume of the glass tube = Volume of the water displaced
Isipadu tiub kaca = Isipadu air yang disesarkan

C Density of a glass tube = Density of water
Ketumpatan tiub kaca = Ketumpatan air

D Density of lead shot = Density of glass tube
Ketumpatan biji plumbum = Ketumpatan tiub kaca

20 Diagram 10 shows an experiment to determine the specific heat capacity of water.
Rajah 10 menunjukkan radas eksperimen untuk menentukan muatan haba tentu air.

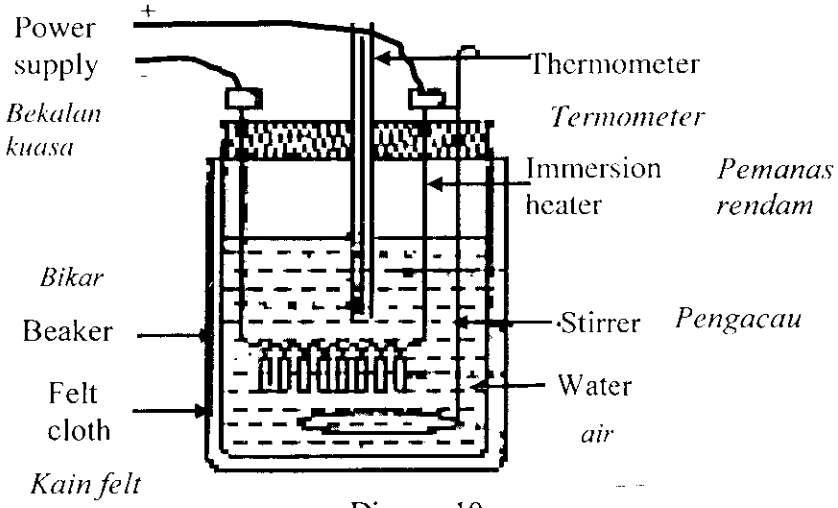


Diagram10
Rajah 10

What is the function of the felt cloth?
Apakah fungsi kain felt?

A To reduce the amount of heat lost to the surrounding
Untuk mengurangkan kehilangan haba keperisekitaran

B To avoid the beaker from overheating.
Untuk mengelakkan bikar dari terlalu panas

C To keep the water temperature remain constant
Untuk memastikan suhu air tetap

D To enable the beaker to be carried easily.
Untuk memudahkan bikar dibawa.

21 Diagram 11 shows a manometer which is connected to a gas supply.
Rajah 11 menunjukkan manometer disambungkan kebekalan gas.

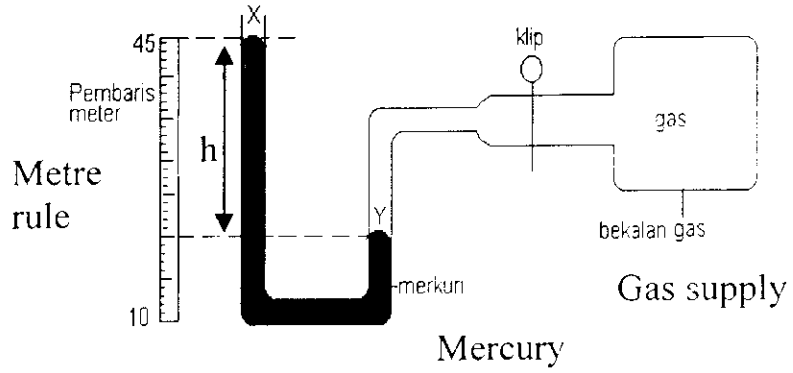


Diagram 11
Rajah 11

What happens to the value of h when mercury is added to the manometer?
Apa akan terjadi pada nilah h bila merkuri di tambah pada manometer?

A Increases / *bertambah*
B Decreases / *berkurang*
C No changes / *tiada perubahan*

22 Diagram 12 shows two objects and a thermometer at a near distance.
Rajah12 menunjukkan dua objek dan thermometer pada jarak berdekatan.

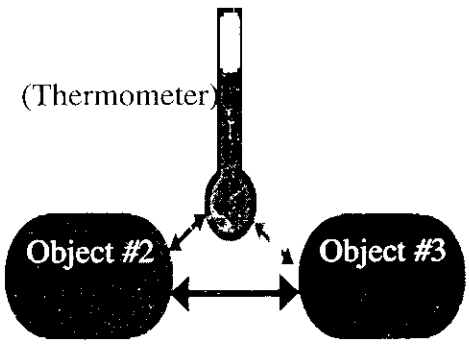


Diagram 12
Rajah 12

Which statement is correct when the objects are in the state of thermal equilibrium?
Pernyataan yang manakah betul semasa objek berada dalam keseimbangan terma?

A Temperature of one of the object is higher than the other.
Suhu salah satu objek lebih tinggi daripada objek satu lagi.

B The quantity of heat energy in the objects are the same
Kuantiti haba dalam kedua-dua objek adalah sama.

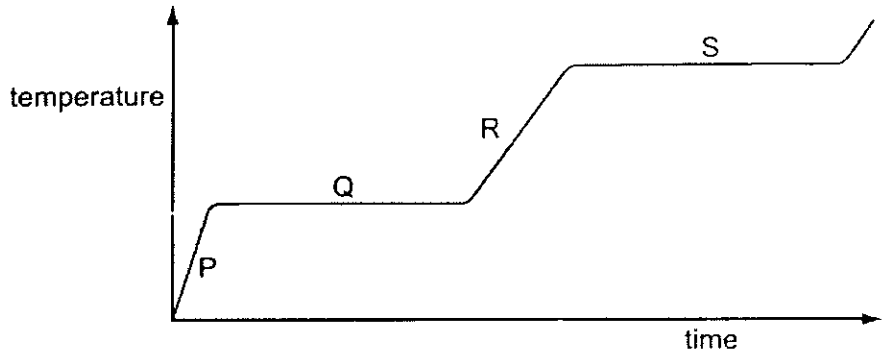
C Rate of change of temperature of X is higher than that of Y.
Kadar perubahan suhu X lebih besar daripada Y.

D Net rate of heat flow between X and Y is zero
Kadar bersih pengaliran haba antara X dan Y adalah sifar.

23 In an experiment to determine the specific heat capacity of an object, it is found that 10 400 J is needed to raise the temperature of a 4 kg block by 20 °C.
Calculate the specific heat capacity of the object?
Dalam suatu eksperimen untuk menentukan muatan haba tentu sebuah logam, didapati 10 400 J tenaga digunakan untuk menaikkan 4 kg blok sebanyak 20 °C.
Hitungkan muatan haba tentu objek?

A 130 J kg^{-1} $^0C^{-1}$
B 260 J kg^{-1} $^0C^{-1}$
C 520 J kg^{-1} $^0C^{-1}$
D 1040 J kg^{-1} $^0C^{-1}$

24 A substance is heated at a steady rate. It changes from a solid to a liquid, and then to gas.
The graph shows how its temperature changes with time.
Suatu bahan dipanaskan pada kadar seragam. Ia berubah dari keadaan pepejal kepada cecair, kemudiannya kepada gas. Graf menunjukkan bagaimana suhu berubah dengan masa.



Which parts of the graph show a state with only solid and only liquid respectively?
Bahagian manakah pada graf menunjukkan keadaan pepajal dan cecair sahaja?

A P and R
P dan R
B Q and R
Q dan R
C P and S
P dan S
D Q and S
Q dan S

25 Which of the following factor causes the pressure of a gas in a cylinder to increase?
Faktor yang manakah menyebabkan tekanan gas dalam silinder bertambah

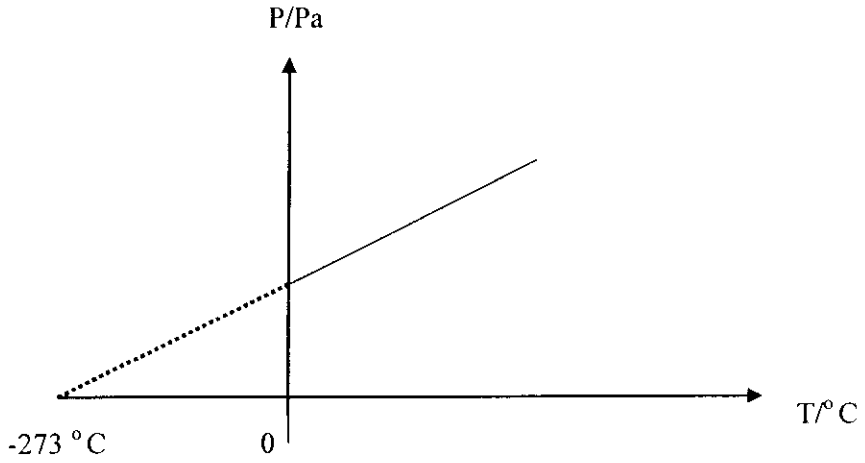
A The volume of the cylinder decreases.
Isipadu silinder berkurang

B The average distance between the gas molecules decreases.
Purata jarak molekul gas berkurang.

C The average speed increases.
Purata laju bertambah

D The rate of collision between the gas molecules and the walls of the cylinder increases.
Kadar perlanggaran antara molekul gas dengan dinding bekas bertambah

26 The graph shows the relationship between pressure of a gas with temperature.
Graf menunjukkan perhubungan antara tekanan gas dengan suhu.



Which of the following relationship is true?
Manakah diantara hubungan berikut benar?

A P α T

B P α 1/T

C P increases T increases
P bertambah T bertambah

27 Diagram 13 shows the formation of image by a concave mirror.
Rajah 13 menunjukkan pembentukan imej cermin cekung.

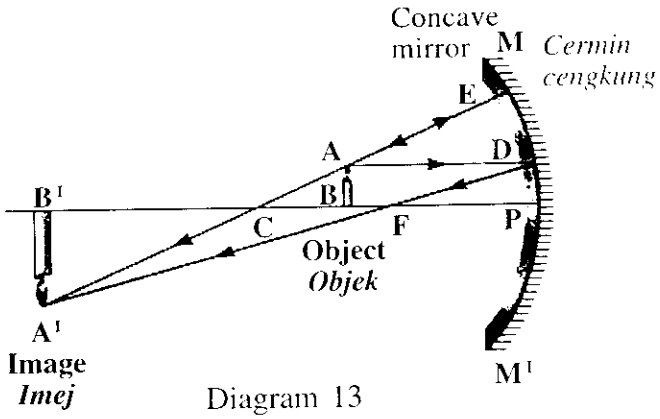


Diagram 13
Rajah 13

The characteristics of the image formed are
Ciri-ciri imej terbentuk

A real, upright and smaller
Sahih, tegak, mengecil

B real, inverted and magnified
Sahih, tertonggeng, membesar

C virtual, upright and smaller
Maya, tegak, mengecil

D virtual, inverted and smaller.
Maya, tertonggeng, mengecil

28 Diagram 14 shows a light ray directed towards a glass block.
In which direction does the light move from point N?
(The critical angle of the glass is 45° / Sudut genting kaca 45°)
Rajah 14 menunjukkan sinar cahaya kearah blok kaca .
Kearah manakah sinar bergerak daripada titik N?

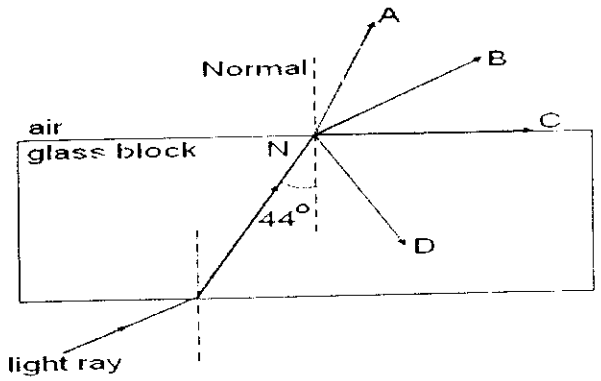


Diagram 14
Rajah 14

29 Diagram 15 below shows arrangement of the apparatus to determine refractive index of glass.
Rajah 15 menunjukkan susunan radas bagi menentukan indek biasan gelas

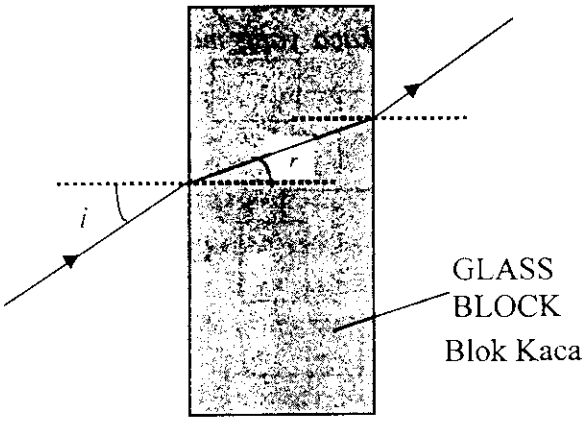


Diagram 15
Rajah 15

Which of the followings would give a straight line graph through the origin.
Manakah yang berikut akan memberikan geraf garis lurus melalui asalan.

A i plotted against sin r
i lawan Sin r

B i plotted against r
i lawan r

C Sin i plotted against r
Sin i lawan r

D Sin i plotted against Sin r
Sin i lawan Sin r

30 Diagram 16 shows the wave patterns formed by waves from two coherent sources P and Q.
Rajah 16 menunjukkan bentuk gelombang yang terhasil dari dua sumber koheren P dan Q.

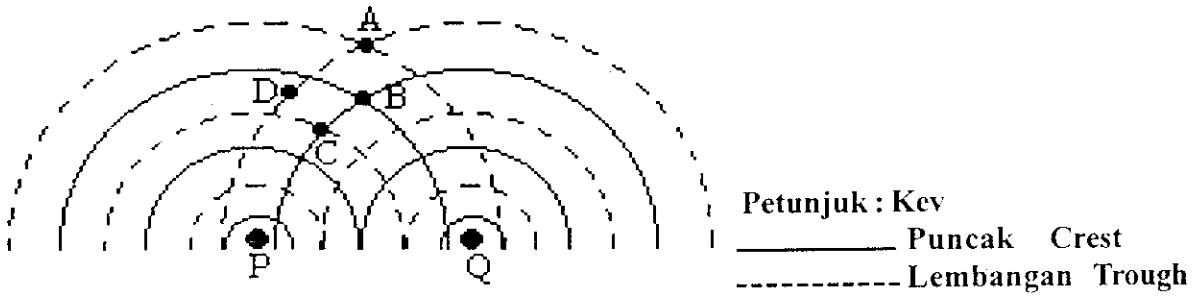
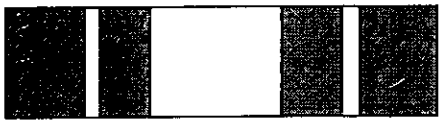


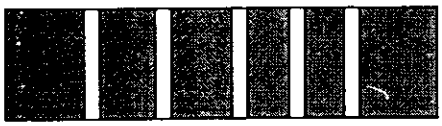
Diagram 16
Rajah 16

Constructive interference occurs at
Interferens membina terjadi pada

A A
B B
C D
D A and B

31 Which of the following diagrams shows the diffraction pattern of monochromatic light produced by a narrow singe slit?
Manakah rajah berikut merupakan corak belawan yang dihasilkan apabila suatu sumber cahaya monokromatik melalui satu sisip kaca yang mempunyai celahan tunggal yang amat kecil.

A 

B 

C 

D 

32 Diagram 17 shows Young's double slit experiment.
The wavelength of monochromatic iight source is 600 nm and the separation of the two slits is 0.50 mm and the distance between the double slit to the screen is 1.5 m
Rajah 17 menunjukkan eksperimen dwicelah Young.
Jarak gelombang cahaya monokromatik ialah 600 nm dan jarak antara elahan ialah 0.50 mm dan jarak antara sumber dengan layer ialah 1.5 m.

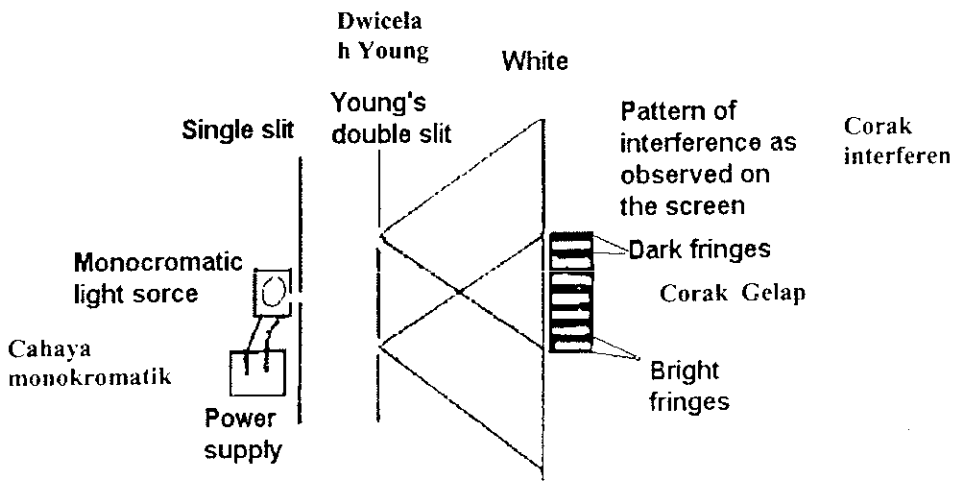


Diagram 17
Rajah 17

Calculate the separation of the fringes.
Hitungkan jarak diantara pinggir yang berturutan.

A 1.8 mm
B 3.6 mm
C 12.8 mm
D 2.5.0 mm

33 Diagram 18 shows an electric circuit. What is the effective resistance?
Rajah 18 menunjukkan satu litar elektrik. Berapakah nilai rintangan berkesan?

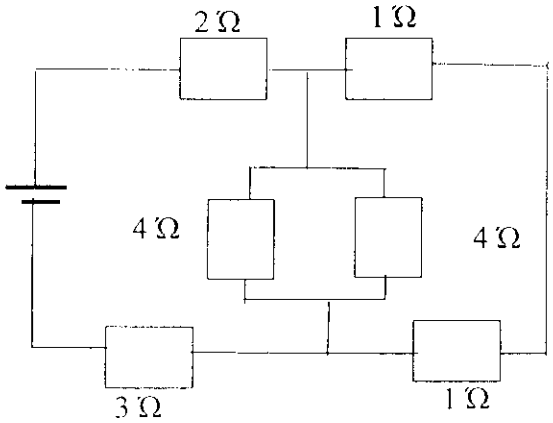


Diagram 18
Rajah 18

A 11 Ω
B 10 Ω
C 8 Ω
D 6 Ω

34 Diagram 19 shows a circuit containing four bulbs A, B, C and D, which is lit at normal brightness. Which bulb when faulty will cause all the bulbs not to light up ?
Rajah 19 menunjukkan litar yang mengandungi empat mentol A, B, C, D yang menyala pada kecerahan normal. Mentol manakah apabila mengalami kerosakan akan menyebabkan semua mentol tidak menyala

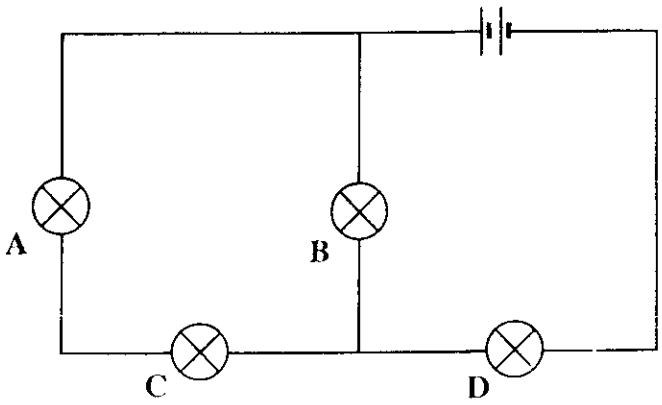
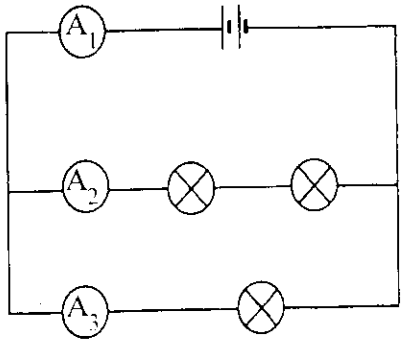


Diagram 19
Rajah 19

35 All the bulbs below are identical.
Kesemua mentol adalah serupa.



Which of the following statement is **true** ?
*Manakah antara penyataan berikut yang **benar**?*

A Reading of A1 > A 2 > A3 / *Bacaan* A1 > A 2 > A3
B Reading of A1 > A3 > A2 / *Bacaan* A1 > A3 > A2
C Reading of A2 > A1 > A3 / *Bacaan* A2 > A1 > A3
D Reading of A3 > A1 > A2 / *Bacaan* A3 > A1 > A2

36 Diagram 20 shows five bulbs being lighted up. Which bulbs will carry the same current?
Rajah 20 menunjukkan lima mentol yang menyala. Mentol manakah yang mempunyai arus yang sama?

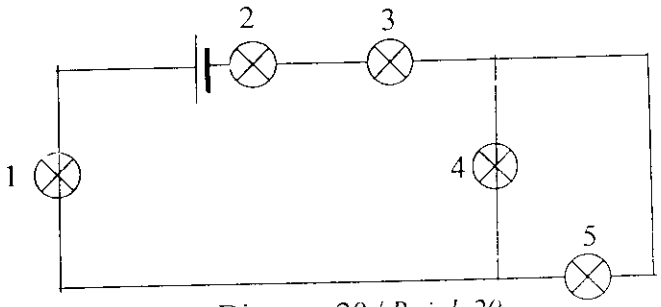
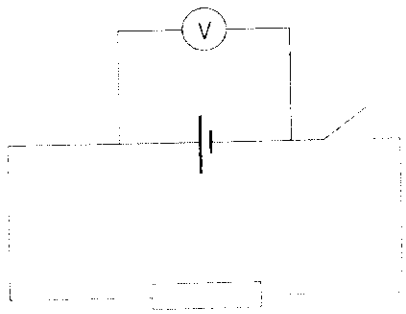


Diagram 20 / *Rajah 20*

A 1, 2 and 3 / *1, 2 dan* 3
B 1, 2 and 4 / *1, 2 dan* 4
C 2 and 3 / *2 dan* 3
D 4 and 5 / *4 dan* 5

37 The voltmeter measures the
Voltmeter menunjukkan bacaan



A internal resistance of the battery / *Rintangan dalam bateri*
B electromotive force of the battery / *Dayagerak elektrik bateri*
C current flow in the circuit / *Arus elektrik dalam litar*
D potential difference across the resistor / *Beza upaya merentasi perintang*

38 The primary coil of a transformer connected to 240 V a.c has 50 turns and the secondary coil has 250 turns. Which of the following statement is **false**?
*Sebuah transformer yang disambung kepada bekalan kuasa arus ulangalik mempunyai 50 lilitan pada gegelung primer dan 250 lilitan pada gegelung sekunder. Pernyataan yang manakah **tidak** benar?*

A Alternating current is produced at the secondary coil
Satu arus ulangalik yang berubah dihasilkan pada gegelung sekunder

B Output power is greater than input power
Kuasa output lebih besar daripada kuasa input

C Output voltage is higher then the input voltage
Voltan output lebih besar daripada voltan input

D Input current is higher than the output current
Arus input lebih besar daripada arus output

39 Diagram 21 shows an ideal transformer. Bulb X and bulb Y are identical.
Rajah 21 menunjukkan sebuah transformer unggul. Mentol X dan Y adalah serupa.

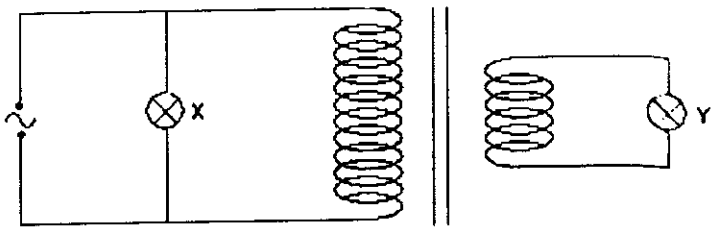


Diagram 21 / *Rajah 21*

Which of the following statement is **correct**?
*Penyataan berikut manakah yang **benar**?*

A Bulb X is brighter than bulb Y
Mentol X menyala lebih cerah pada mentol Y

B Bulb Y is brighter than bulb X
Mentol Y menyala lebih cerah pada mentol X

C Bulb X and bulb Y have the same brightness
Mentol X dan Y menyala dengan kecerahan yang sama.

40 Diagram 22 shows a three-pin plug connected to an electric kettle. Which of the following part allows the current flow from the heater to the power source?
Rajah 22 menunjukkan bahagian dalam suatu palam tiga pin yang disambung kepada sebuah pemanas elektrik. Pada bahagian manakah arus akan mengalir dari pemanas ke punca bekalan kuasa?

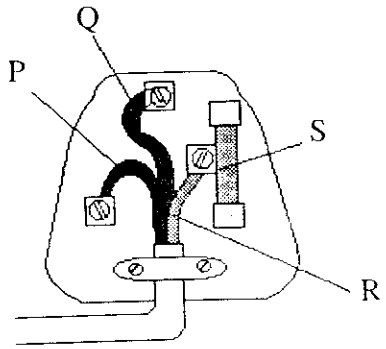


Diagram 22
Rajah 22

A P
B Q
C R
D S

41 The table shows the electrical energy consumption tariff.
Jadual menunjukkan tariff penggunan tenaga lektrik.

Electrical units / Elektrik unit	Cost per unit (Sen) / Harga seunit
First 20 units / *20 unit pertama*	RM 0. 22
First 50 units / *50 unit pertama*	RM 0. 25
First 80 units / *80 unit pertama*	RM 0. 30

Calculate the cost in RM of using the electrical appliances below.
Hitung kos penggunaan alat-alat elektrik berikut.

Appliance / Alat	Time / Masa
Kettle / *Cerek* 3 kW	2 hr / jam
Lamp / *Lampu* 1000 W	10hr / jam
Oven / *Ketuhar* 5kW	2 hr / jam
Lamp / *lampu* 100 W	10hr / jam

A RM 5.94
B RM 6.15
C RM 59.40
D RM 61.50

42 Diagram 23 shows an experiment to demonstrate the relationship between electricity and magnetism.
Rajah 23 menunjukkan satu eksperimen bagi menunjukkan perkaitan antara elektrik dan kemagnetan.

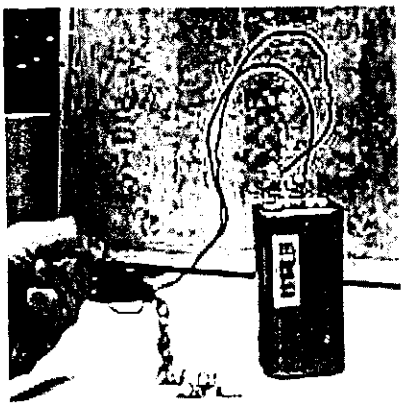


Diagram 23
Rajah 23

Which of the following statement is **not true**?
*Pernyataan berikut yang manakah **tidak benar?***

A The magnetic field increases when the number of turns in the coil increases.
Medan magnet bertambah bila bilangan lilitan bertambah

B The strength of the magnetic field increases with each additional turn in the coil
Kekuatan medan magnet bertambah dengan bertambahnya setiap lilitan.

C When the wire is wrapped around a plastic or wooden object, there would be no magnetic field.
Apabila *dawai dililit disekeliling plastic atau kayu tiada terdapat sebarang medan magnet.*

D With a metal core, especially with iron, the magnetic field is strengthened.
Apabila diletakkan logam terutamanya besi medan magnet bertambah kuat.

43 Diagram 24 shows an electromagnetic wave.
Rajah 24 menunjukkan gelombang electromagnet.

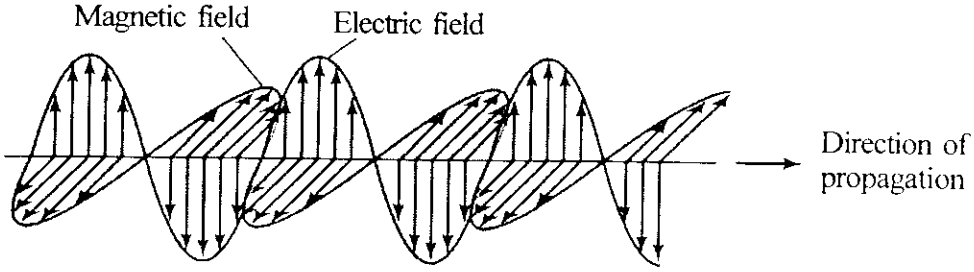


Diagram 24
Rajah 24

Which of the following statement is **not true**?
*Pernyataan manakah yang berikut **tidak benar**?*

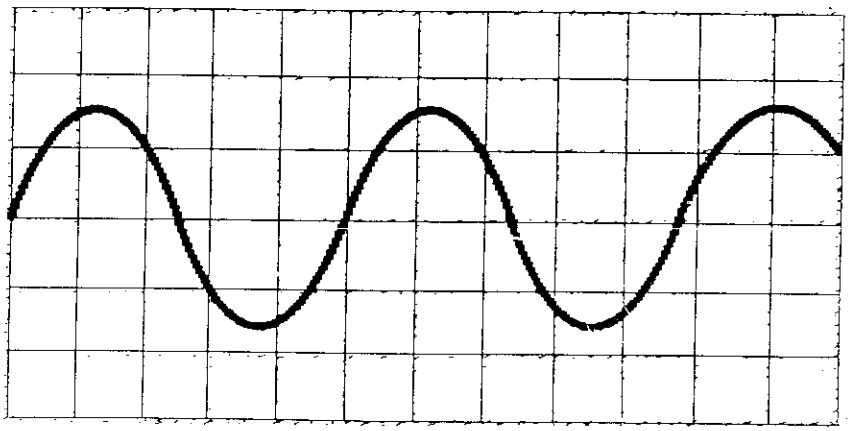
A The wave is produced when the magnetic field and electric field vibrate at right angle to each other.
Gelombang terhasil bila medan magnet dan medan elektrik bergetar pada sudut tegak antara satu sama lain.

B Electromagnetic waves transfer energy without any medium.
Gelombang electromagnet memindahkan tenaga tanpa sebarang medium

C Electromagnetic waves cannot be emitted and absorbed by matter.
Gelombang electromagnet tidak dipancarkan atau diserap oleh jirim.

D The electromagnetic waves can be superposed and produced interference effects.
Gelombang boleh bersuperposisi dan menghasilkan kesan interferen.

44. Diagram shows the CRO screen. The control knob for time base is 1 ms/div and the Y-gain is set at 0.5 V/div.
Rajah menunjukkan skrin OSK. Kawalan dasar masa ialah 1 ms/bhg dan gandaan Y disetkan pada 0.5 V/bhg.



What is the frequency and peak voltage the wave form.
Berapakah frekuensi dan Voltan puncak gelombang?

	Frequency/Hz	Volt/V
A	200	0.75
B	100	0.70
C	50	0.50
D	200	0.50

45 Diagrams 25 shows a circuit consisting of a diode and a bulb and batteries. When the switch is on which of the bulbs light up?
Rajah 25 menunjukkan satu litar mengandungi diod, mentol dan bateri. Bila suis di pasang manakah antara mentol akan menyala?

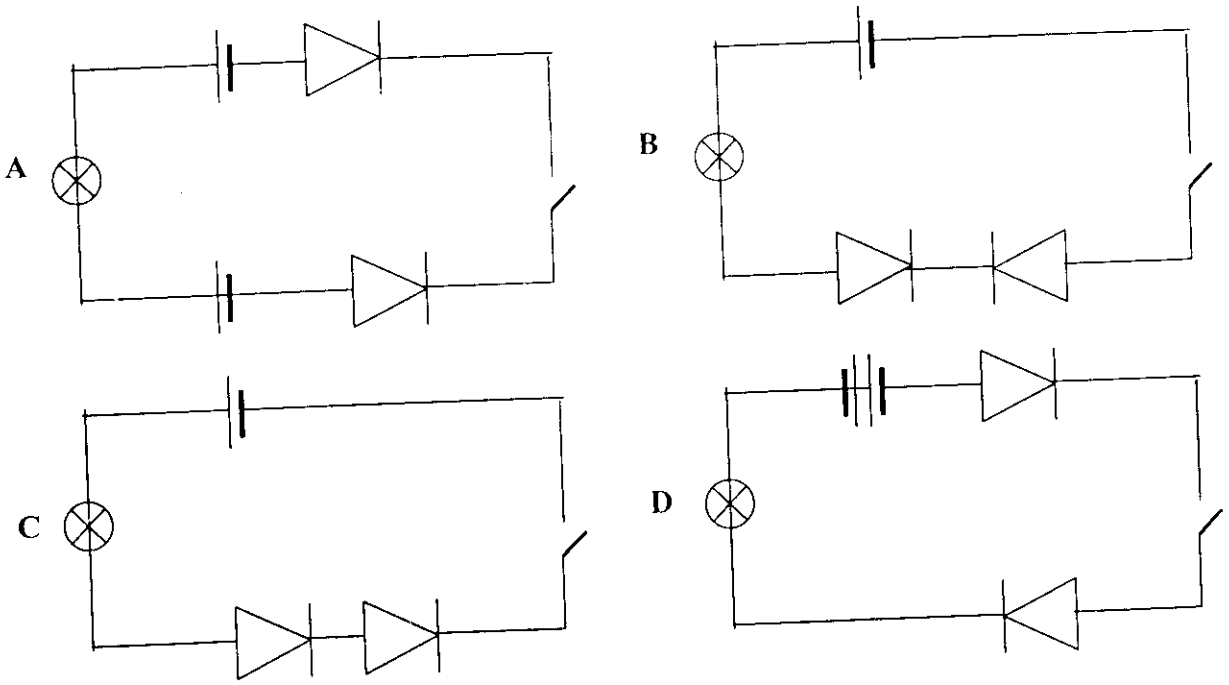


Diagram 25
Rajah 25

46 Diagram 26 shows a logic gate circuit with input signals 1, 1, 1.
Rajah 26 menunjukkan satu get logic dengan input 1, 1, 1

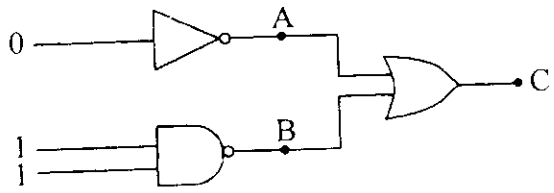


Diagram 26
Rajah 26

Which are the logic values of A, B and C?
Manakah nilai logik bagi A, B dan C?

	A	B	C
A	0	0	0
B	1	1	0
C	1	1	1
D	1	0	0

47 Diagram 27 shows a circuit with four diodes and a resistor to produce full wave rectification.
Rajah 27 menunjukkan satu litar dengan empat dioddan perintang bagi menghasilkan Rektifikasi penuh gelombang.

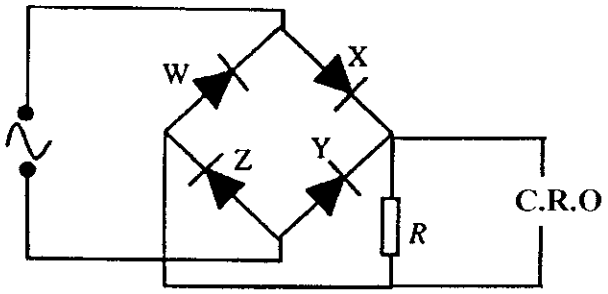
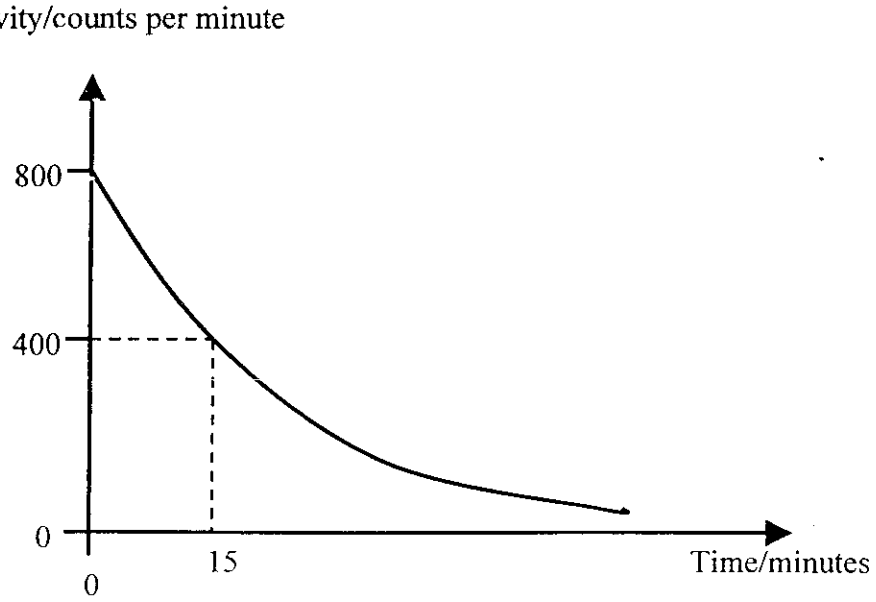


Diagram 27
Rajah 27

Which of the diode is connected **wrongly**?
*Manakah diod yang **silap** di pasang?*

A W
B X
C Y
D Z

48 The graph shows the decay curve of a radioactive substance.
Graf menunjukkan reputan satu bahan radioaktif.



If the initial activity of the radioactive material is 800 counts per minute, what is the activity after 1 hour?
Jika bacaan awal bahan radioaktif adalah 800 bilangan setiap minit, berapakah aktiviti selepas 1 jam?

A 400
B 200
C 100
D 50

49 Diagram 28 shows the path of radioactive rays, S, Y and T.
Rajah 28 menunjukkan lintasan sinaran radioaktif S, Y dan T
Which of the following shows the type of ray S, Y and T?
Manakah menunjukkan jenis sinar S, Y dan T?

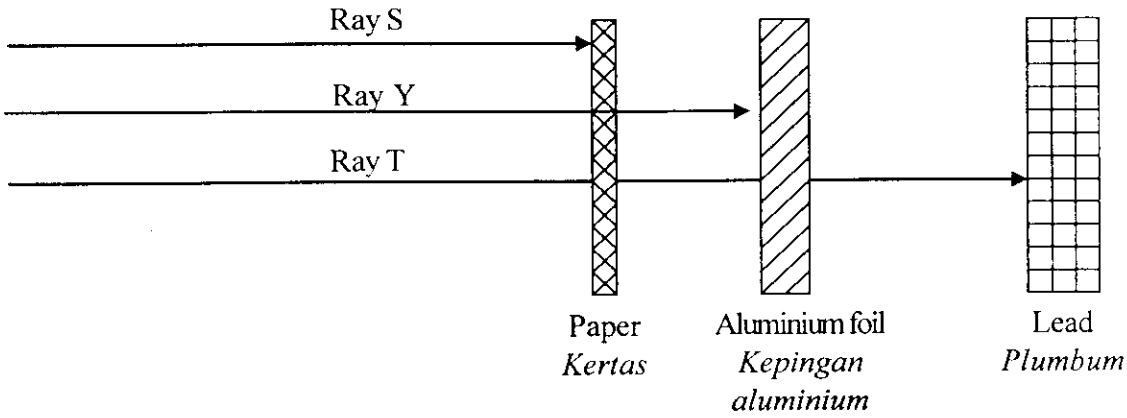


Diagram 28
Rajah 28

	S	T	Y
A	α	β	γ
B	α	γ	B
C	β	γ	α
D	γ	β	α

50. A radioactive decay is represented by
Reputan radioaktif diwakili oleh

$$^{212}_{84}Po \longrightarrow {}^{A}_{Z}X + {}^{4}_{2}He$$

Determine the values of A and Z for nucleus X.
Tentukan nilai A dan Z untuk nucleus X.

	A	Z
A	**208**	**80**
B	**204**	**80**
C	**220**	**86**
D	**208**	**82**

END OF QUESTION PAPER
KERTAS SOALAN TAMAT