



# SMK KHIR JOHARI, SG SUMUN, PERAK

## PEPERIKSAAN PERCUBAAN 2018

### TINGKATAN 5

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## FIZIK

### Kertas 1

Satu jam lima belas minit

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#### JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU

1. *Kertas soalan ini mempunyai 50 soalan aneka pilihan.*
2. *Jawab semua soalan.*
3. *Jawab dengan menghitamkan ruangan yang betul pada kertas jawapan.*
4. *Bagi setiap soalan hitamkan satu ruang sahaja.*
5. *Sekiranya anda hendak menukarkan jawapan, padamkan tanda yang telah dibuat. Kemudian tandakan jawapan yang baru.*
6. *Satu senarai rumus disediakan di halaman 2.*
7. *Anda dibenarkan menggunakan kalkulator saintifik yang tidak boleh diprogram.*

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Kertas soalan ini mengandungi 31 halaman bercetak

The following information may be useful. The symbols have their usual meaning.  
 Maklumat berikut mungkin berfaedah. Simbol-simbol mempunyai makna yang biasa.

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*,  $P = \frac{\text{energy}}{\text{time}}$

10.  $\rho = \frac{m}{V}$

11. *Pressure in liquid*,  $p = h\rho g$

12. *Pressure*,  $p = \frac{F}{A}$

13. *Heat*,  $Q = mc\theta$

14. *Heat*,  $Q = m\ell$

15.  $P_1V_1 = P_2V_2$

16.  $\frac{V_1}{T_1} = \frac{V_2}{T_2}$

17.  $n = \frac{\text{real depth}}{\text{apparent depth}}$

18.  $\frac{1}{f} = \frac{1}{u} + \frac{1}{v}$

19. *Linear magnification*,  $m = \frac{v}{u}$

20.  $P = 1/f$

21.  $v = f\lambda$

22.  $\lambda = \frac{ax}{D}$

23.  $Q = It$

24.  $E = VQ$

25.  $V = IR$

26.  $E = V + Ir$

27. *Power*,  $P = VI$

28.  $\frac{N_s}{N_p} = \frac{V_s}{V_p}$

29. *Efficiency* =  $\frac{I_s V_s}{I_p V_p} \times 100\%$

30.  $g = 10 \text{ ms}^{-2}$

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

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

1. Which of the following quantities is a derived quantity  
*Antara kuantiti yang berikut yang manakah kuantiti terbitan*

A Time  
*Masa*

B Mass  
*Jisim*

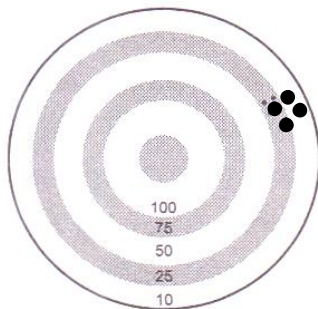
C Force  
*Daya*

D Temperature  
*Suhu*

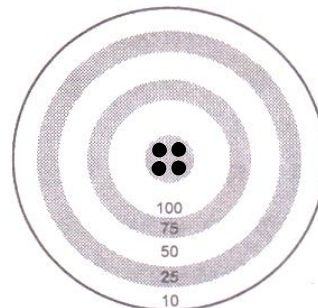
2. Which of the following marks shows the concept of consistency but inaccurate on the target board?

*Antara tanda berikut, yang manakah menunjukkan konsep kepersisan tetapi tidak jitu pada papan sasaran?*

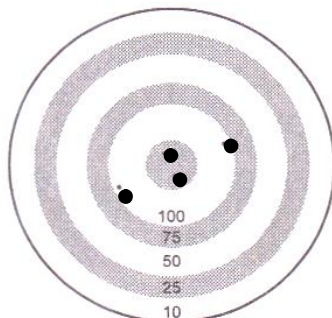
A



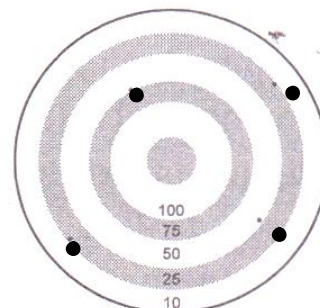
B



C



D



3. Diagram 3 is a graph showing the relationship between R and Q. The equation of the graph is

*Rajah 3 ialah graf yang menunjukkan hubungan antara R dengan Q. Persamaan graf adalah*

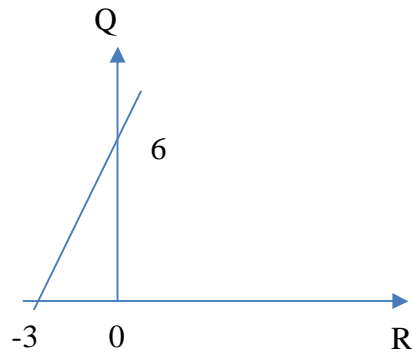


Diagram 3 /Rajah 3

- A  $Q = -2R - 3$   
 B  $Q = -2R + 6$   
 C  $Q = 2R + 6$   
 D  $2Q = -R + 2$
4. A toy car moves from point A to point P in 25 s as shown in Diagram 4.  
*Sebuah kereta mainan bergerak dari titik A ke titik P dalam masa 25 s seperti yang ditunjukkan dalam Rajah 4.*

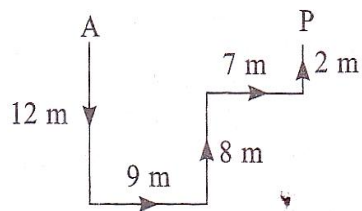


Diagram 4/Rajah 4

What is the average velocity of the toy car?  
*Berapakah purata halaju bagi kereta mainan tersebut?*

- A  $0.64 \text{ ms}^{-1}$   
 B  $0.88 \text{ ms}^{-1}$   
 C  $1.52 \text{ ms}^{-1}$   
 D  $2.00 \text{ ms}^{-1}$

5. Diagram 5 shows a velocity-time graph of an object.  
*Rajah 5 menunjukkan graf halaju-masa bagi suatu objek.*

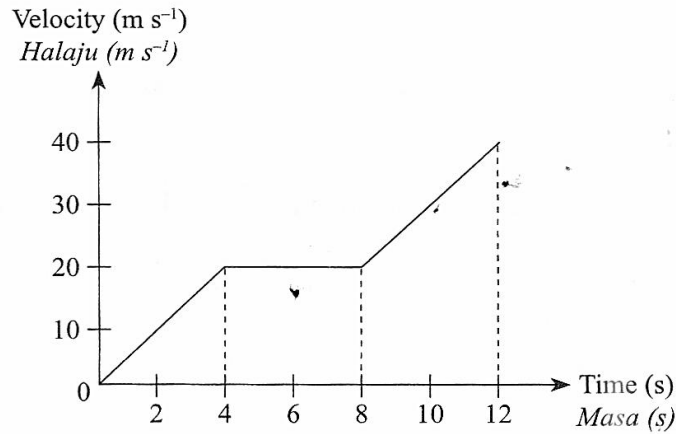


Diagram 5/ *Rajah 5*

What is the average velocity of the object in 12 s?  
*Berapakah halaju purata objek itu dalam 12 s?*

- A  $3 \text{ ms}^{-1}$
  - B  $15 \text{ ms}^{-1}$
  - C  $18 \text{ ms}^{-1}$
  - D  $20 \text{ ms}^{-1}$
6. Diagram 6 shows an astronaut walking on the moon's surface.  
*Rajah 6 menunjukkan seorang angkasawan berjalan di permukaan bulan.*

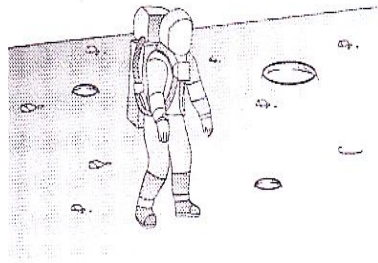


Diagram 6/ *Rajah 6*

What can you conclude about his inertia?  
*Apakah yang dapat anda simpulkan mengenai inersianya?*

- A Increases  
*Meningkat*
- B Decreases  
*Menurun*
- C Unchanged  
*Tidak berubah*

7. Diagram 7 shows the situation of two trolleys before and after collision.  
*Rajah 7 menunjukkan keadaan dua buah troli sebelum dan selepas perlanggaran.*

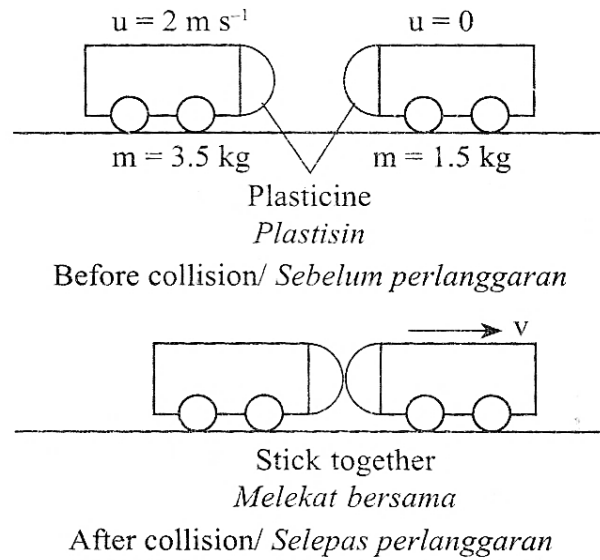


Diagram 7/ *Rajah 7*

What is the velocity of both trolleys after collision?  
*Berapakah halaju kedua-dua troli tersebut selepas perlanggaran?*

- A  $0.71 \text{ ms}^{-1}$
- B  $1.40 \text{ ms}^{-1}$
- C  $2.50 \text{ ms}^{-1}$
- D  $4.70 \text{ ms}^{-1}$

8. Diagram 8 shows a worker pulls a trolley of mass 60 kg with a force of 200 N. The frictional force between the trolley and the floor is 20 N.

*Rajah 8 menunjukkan seorang pekerja menarik sebuah troli seberat 60 kg dengan daya 200 N. Daya geseran di antara troli dan lantai ialah 20 N.*

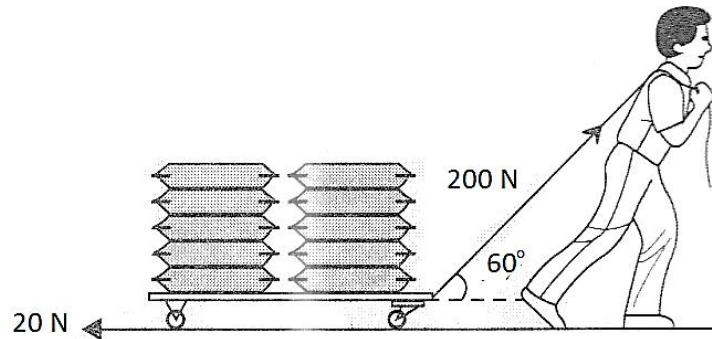


Diagram 8/ Rajah 8

*The acceleration of the trolley is  
Pecutan troli itu ialah*

- A  $0.3 \text{ ms}^{-2}$   
B  $3.0 \text{ ms}^{-2}$   
C  $1.3 \text{ ms}^{-2}$   
D  $3.3 \text{ ms}^{-2}$
9. A soldier jumps from a platform of 2 m to the ground. The mass of the soldier is 50 kg. What is the impulse of the soldier when he hits the ground?  
*Seorang tentera melompat dari platform setinggi 2 m ke tanah. Jisim tentera tersebut ialah 50 kg. Berapakah impuls tentera tersebut apabila dia menjejaki tanah?*

- A 160 Ns  
B 316 Ns  
C 480 Ns  
D 640 Ns

10. An object is falling freely in a vacuum cylinder. Which of the following quantities will remain constant with time?

*Satu objek jatuh bebas di dalam sebuah silinder vakum. Antara kuantiti berikut, yang manakah akan kekal malar dengan masa?*

- A Weight  
*Berat*
- B Velocity  
*Halaju*
- C Momentum  
*Momentum*
- D Kinetic energy  
*Tenaga kinetic*

11. A set of traffic lights is hanging on a horizontal beam as shown in Diagram 11.

*Satu set lampu isyarat digantung pada sebatang rasuk mendatar seperti yang ditunjukkan dalam Rajah 11.*

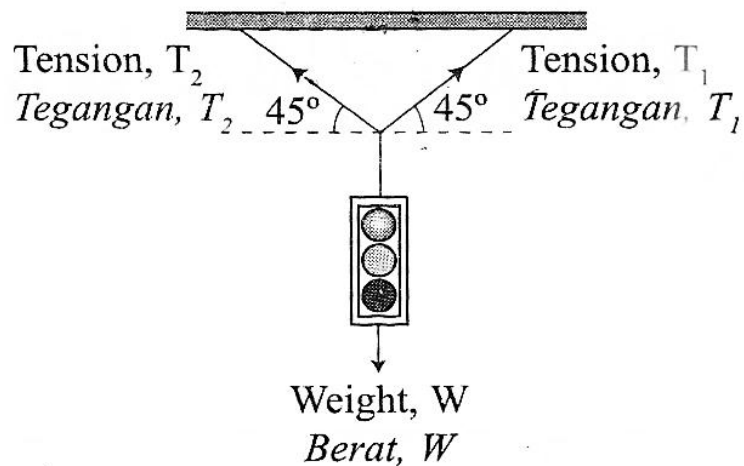
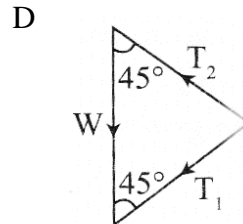
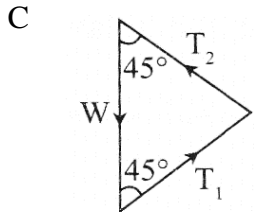
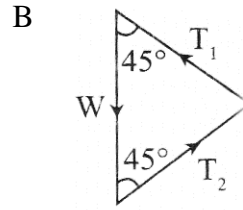
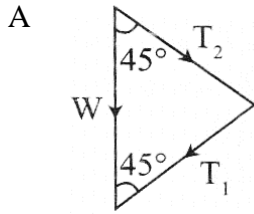


Diagram 11/ *Rajah 11*

Which vector diagram relates the forces  $T_1$ ,  $T_2$  and  $W$ ?

*Rajah vektor manakah mengaitkan daya  $T_1$ ,  $T_2$  and  $W$ ?*





12. A motor takes 5 s to lift a load of 10kg mass through a vertical height of 2 m. What is the output power of this motor?

*Sebuah motor mengambil masa 5 s untuk mengangkat suatu beban berjisim 10 kg melalui ketinggian menegak 2 m. Berapakah kuasa output motor ini?*

- A 4W  
 B 40W  
 C 50W  
 D 500W
13. Diagram 13 shows the relationship between the length of spring and the applied force of two different springs X and Y.  
*Rajah 13 menunjukkan hubungan antara panjang spring dengan daya tindakan bagi dua spring yang berbeza X dan Y.*

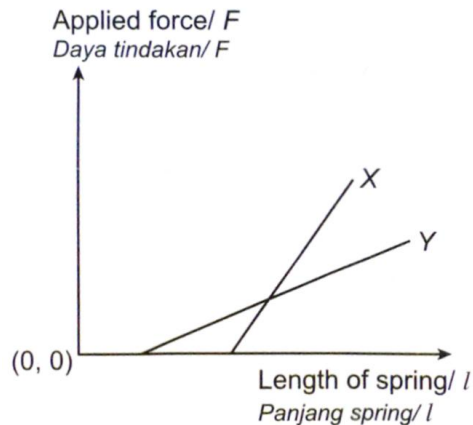


Diagram 13/ Rajah 13

Which of the following statements is correct?

*Antara pernyataan yang berikut, yang manakah benar?*

- A The original length of *Y* is longer than *X*.  
*Panjang asal Y adalah lebih panjang daripada panjang asal X.*
- B Spring *Y* is harder than *X*.  
*Spring Y adalah lebih keras daripada spring X.*
- C To stretch 1.0 cm, more energy is required for spring *X* than spring *Y*.  
*Untuk pemanjangan 1.0 cm, lebih banyak tenaga diperlukan bagi spring X berbanding spring Y.*

14. Diagram 14 shows a car that has a weight of 18000 N. The surface area of each tyre in contact with the ground is 16 cm<sup>2</sup>.

*Rajah 14 menunjukkan kereta yang mempunyai berat 18000 N. Luas permukaan setiap tayar kereta yang menyentuh tanah ialah 16 cm<sup>2</sup>.*

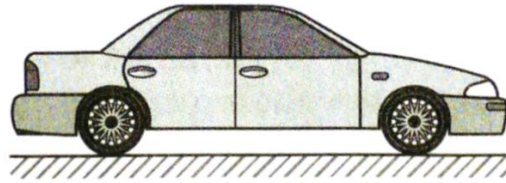


Diagram 14 / Rajah 14

What is the pressure exerted on the ground by each tyre?

*Berapakah tekanan yang dikenakan oleh setiap tayar terhadap tanah?*

- A  $1.1 \times 10^2$  Pa
- B  $1.1 \times 10^6$  Pa
- C  $2.8 \times 10^5$  Pa
- D  $2.8 \times 10^6$  Pa

15. Diagram 15 shows an inflated balloon that is connected to a manometer.  
*Rajah 15 menunjukkan belon kembung yang disambungkan pada sebuah manometer.*

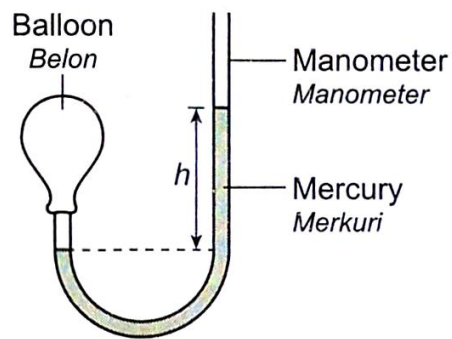


Diagram 15/ *Rajah 15*

What happens to the height,  $h$  of the mercury in the manometer if the balloon is pressed?  
*Apakah yang berlaku pada tinggi,  $h$  merkuri dalam manometer jika belon itu ditekan?*

- A Increases  
*Bertambah*
- B Decreases  
*Berkurang*
- C No changes  
*Tiada perubahan*
16. Diagram 16 shows a suction pump which is pressed against wall.  
*Rajah 16 menunjukkan pam sedut yang ditekan pada dinding.*

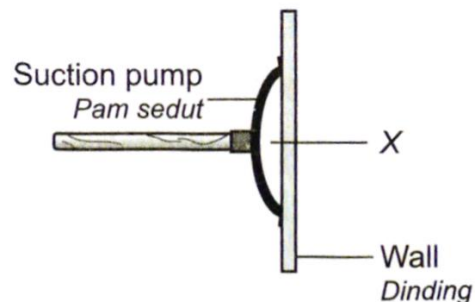


Diagram 16/ *Rajah 16*

The pressure at X is  
*Tekanan pada X adalah*

- A equal to zero  
*Sama dengan sifar*
- B at atmospheric pressure  
*Pada tekanan atmosfera*
- C higher than atmospheric pressure  
*Lebih tinggi daripada tekanan atmosfera*
- D lower than atmospheric pressure  
*Kurang daripada tekanan atmosfera*

17. Diagram 17 shows a model of a simple hydraulic system. The weight of load is 500 N. The ratio between the cross-section area of piston X and piston Y is 5 to 1.  
*Rajah 17 menunjukkan sebuah model system hidraulik ringkas. Berat beban ialah 500 N. Kadar luas keratan rentas antara omboh X dengan omboh Y ialah 5 kepada 1.*

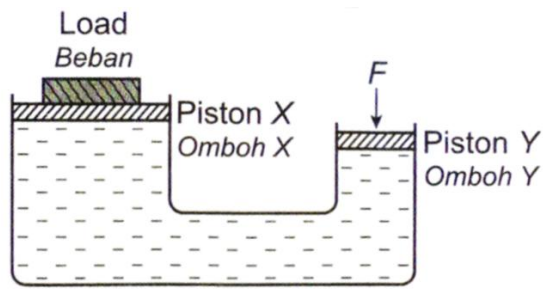


Diagram 17/ *Rajah 17*

What is the force, F exerted to piston Y in order to support the load?  
*Apakah nilai daya, F yang dikenakan pada omboh Y untuk menyokong beban tersebut?*

- A 100 N
- B 200 N
- C 300 N
- D 500 N

18. Diagram 18 shows a log of 5 kg floating freely on sea water.  
*Rajah 18 menunjukkan sebatang kayu berjisim 5 kg terapung di atas air laut.*

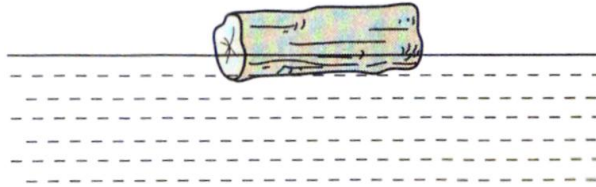


Diagram 18 / *Rajah 18*

What is the buoyant force acting on the log?

*Apakah daya apungan yang bertindak ke atas kayu itu?*

- A 5 N  
B 10 N  
C 50 N  
D 100 N
19. Diagram 19 shows a student blowing above a thin sheet of paper.  
*Rajah 19 menunjukkan seorang pelajar meniup di atas permukaan sehelai kertas yang nipis.*

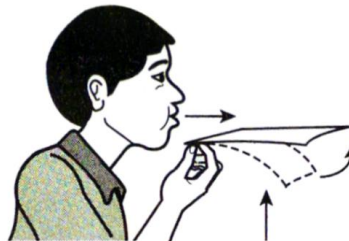


Diagram 19/ *Rajah 19*

The paper rises upwards because

*Kertas bergerak ke atas disebabkan oleh*

- A the atmospheric pressure below the paper is higher than air pressure above the paper.  
*Tekanan atmosfera di bawah kertas adalah lebih tinggi berbanding tekanan udara di atas kertas.*
- B the atmospheric pressure below the paper is lower than air pressure above the paper.  
*Tekanan atmosfera di bawah kertas adalah lebih rendah berbanding tekanan udara di atas kertas.*
- C the atmospheric pressure below the paper is equal to air pressure above the paper.  
*Tekanan atmosfera di bawah kertas adalah sama dengan tekanan udara di atas kertas.*

20. Diagram 20 shows a hot metal sphere immersed in cold water at  $0^{\circ}\text{C}$ .  
*Rajah 20 menunjukkan satu sfera logam yang panas direndam di dalam air sejuk pada suhu  $0^{\circ}\text{C}$ .*

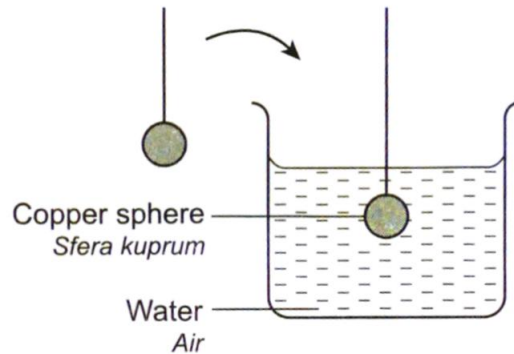


Diagram 20/ Rajah 20

Thermal equilibrium is reached when the  
*Keseimbangan terma tercapai apabila*

- A temperature of sphere  $>$  temperature of the water  
*Suhu sfera  $>$  suhu air*
- B temperature of sphere  $<$  temperature of the water  
*Suhu sfera  $<$  suhu air*
- C temperature of sphere = temperature of the water  
*Suhu sfera = suhu air*
- D sphere begins to melt  
*Sfera mula melebur*
21. 500 g of a liquid at  $90^{\circ}\text{C}$  is mixed with another liquid of the same type of mass  $\mathbf{M}$  g at  $40^{\circ}\text{C}$ . The final temperature of the mixture is  $60^{\circ}\text{C}$ . What is the value of  $\mathbf{M}$ ?  
*Cecair 500 g pada suhu  $90^{\circ}\text{C}$  dicampurkan dengan cecair lain yang sama jenis dengan jisim  $\mathbf{M}$  g pada suhu  $40^{\circ}\text{C}$ . Suhu akhir air ialah  $60^{\circ}\text{C}$ . Apakah nilai  $\mathbf{M}$ ?*
- A 240
- B 640
- C 750
- D 840

22. How much heat is released when 1g of steam condenses to water at 100 °C?  
[Specific latent heat of vaporization of water =  $2.26 \times 10^6 \text{ J kg}^{-1}$ ]  
*Berapakah haba yang dibebaskan apabila 1 g stim dikondensasikan kepada air pada suhu 100 °C?*  
*[Haba pendam tentu pengewapan air =  $2.26 \times 10^6 \text{ J kg}^{-1}$ ]*
- A 20 J
- B 226 J
- C 2 260 J
- D 22 600 J
23. The gas pressure in a car tyre is 28 kPa before the start of a journey and the temperature is 27 °C. After a long journey, the gas pressure in the car tyre becomes 33 kPa. What is the temperature of the gas in the tyre?  
*Tekanan gas dalam sebuah tayar kereta sebelum memulakan perjalanan ialah 28kPa dan suhunya ialah 27 °C. Selepas suatu perjalanan jauh didapati tekanan gas di dalam tayar itu menjadi 33 kPa. Berapakah suhu gas di dalam tayar selepas perjalanan itu?*
- A 22.91 °C
- B 31.82 °C
- C 27.00 °C
- D 80.57 °C

24. Diagram 24 shows Azli is standing in front of a plane mirror at a distance of 5 m.  
*Rajah 24 menunjukkan Azli berdiri di hadapan sebuah cermin satah pada jarak 5 m.*

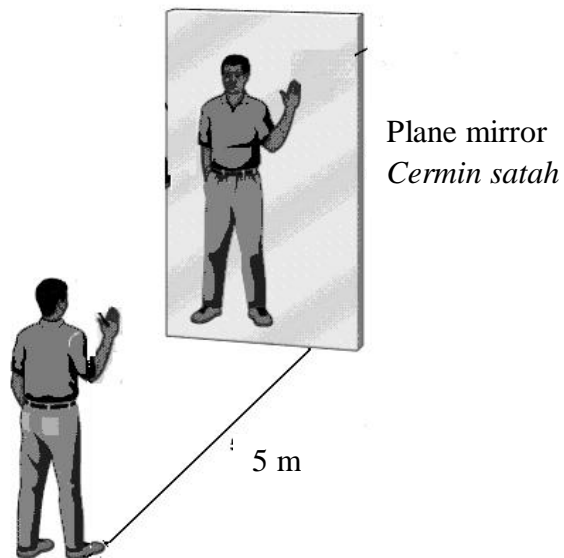


Diagram 24 / *Rajah 24*

What is the distance that Azli has to walk so that the distance between Azli and his image is 3 m.

*Berapakah jarak Azli perlu berjalan supaya jarak antara Azli dengan imejnya adalah 3 m.*

- A 1.0 m
- B 1.5 m
- C 2.0 m
- D 3.5 m



25. Diagram 25 shows a pencil appeared bend in water.  
*Rajah 25 menunjukkan sebatang pensil kelihatan bengkok di dalam air.*



Diagram 25 / Rajah 25

What is the light phenomenon involved?  
*Apakah fenomena cahaya yang terlibat?*

- A Diffraction  
*pembelauan*
  - B Refraction  
*pembiasan*
  - C Total internal reflection  
*pantulan dalam penuh*
  - D Reflection  
*pantulan*
26. Diagram 26 shows light rays, X is directed into glass blocks. Critical angle of the glass is  $42^\circ$ . Which direction of light is moving from point Y?  
*Rajah 26 di bawah menunjukkan sinar cahaya, X ditujukan ke dalam blok kaca. Sudut genting kaca ialah  $42^\circ$ . Arah yang mana satuan cahaya bergerak dari titik Y?*

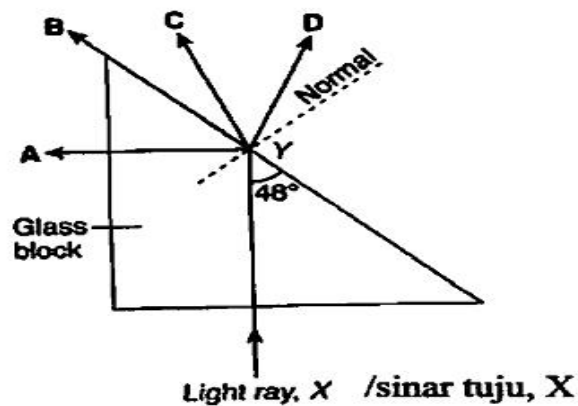
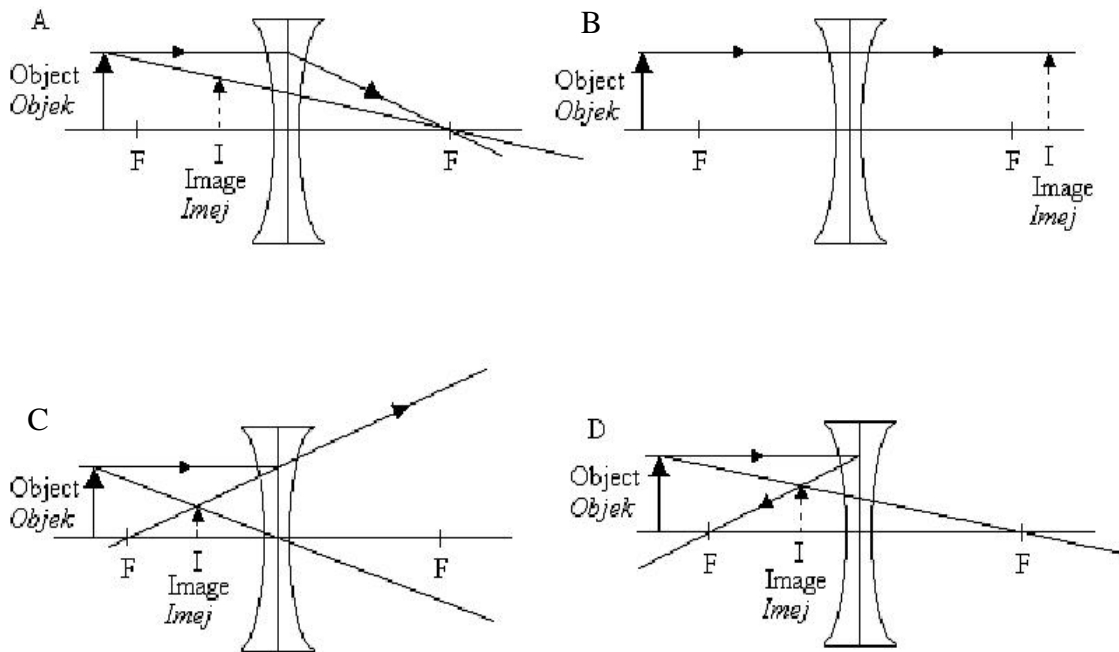


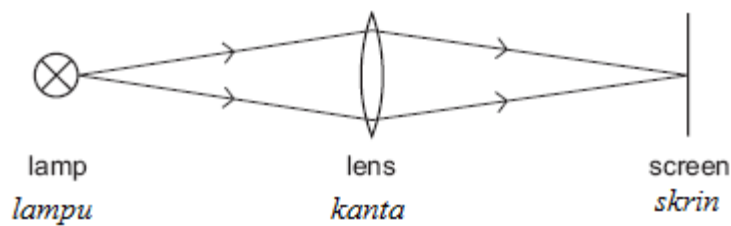
Diagram 26/ Rajah 26

27. Which diagram shows the light ray pass through the right concave lens?  
*Lukisan manakah yang menunjukkan lintasan sinar cahaya yang melalui kanta cekung yang betul?*



28. Which diagram shows an example of a longitudinal wave?  
*Rajah yang manakah menunjukkan contoh gelombang membujur?*

- A Light traveling from a lamp to a screen.  
*Cahaya merambat dari sebuah lampu ke skrin*



- B A water ripple caused by a dipper moving up and down  
*Riak gelombang air dihasilkan oleh pencilup bergetar atas dan bawah.*



- C A spring moved backwards and forwards  
*Spring digerakkan ke depan dan ke belakang*



- D A spring moved up and down  
*Spring digerakkan ke atas dan ke bawah*



29. Diagram 29 shows plane water waves travelling towards an L-shaped barrier in a ripple tank.  
*Rajah 29 menunjukkan gelombang air satah bergerak menuju sebuah halangan berbentuk L dalam sebuah tangki riak.*

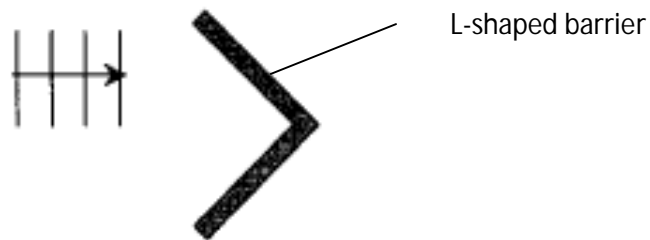
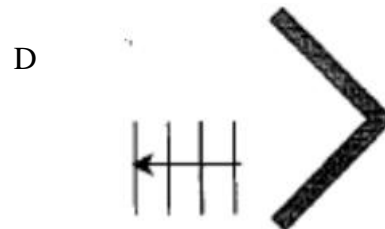
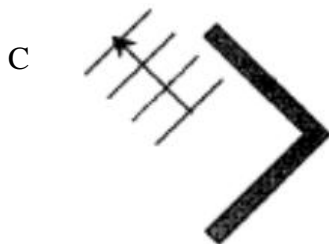
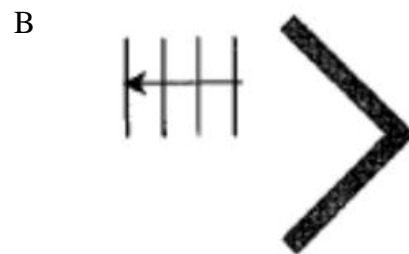
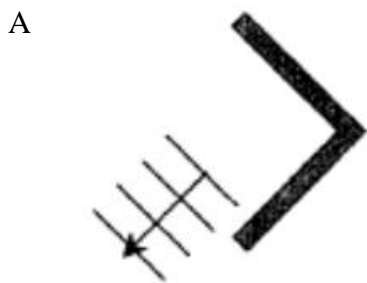


Diagram 29 / Rajah 29

- Which diagram shows the reflected wave pattern?  
*Rajah manakah menunjukkan pola gelombang yang dipantulkan?*



30. Diagram 30 shows waves propagate through three regions P, Q and R.  
*Rajah 30 menunjukkan suatu gelombang merambat melalui tiga kawasan P, Q dan R.*

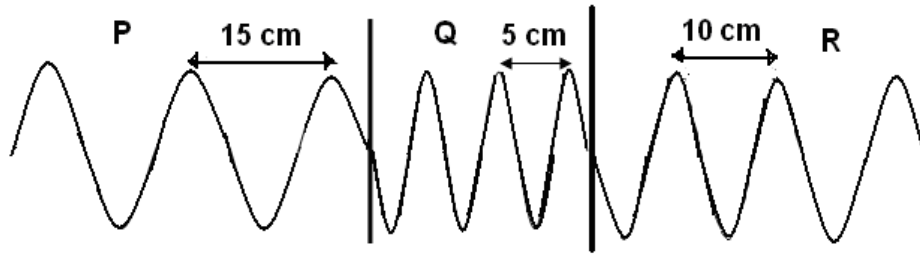
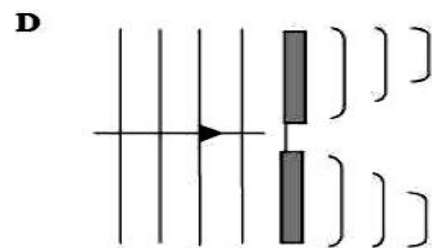
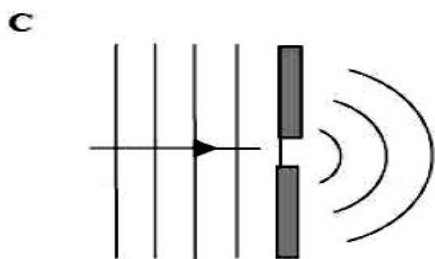
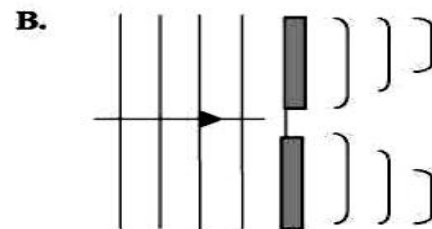
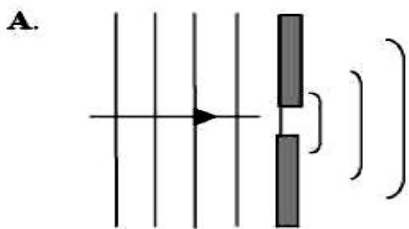


Diagram 30 / Rajah 30

What is the wave speed in region R if the wave speed in region P is  $6\text{ms}^{-1}$ ?

*Berapakah laju gelombang dalam kawasan R jika laju gelombang dalam kawasan P ialah  $6\text{ms}^{-1}$ ?*

- A  $2\text{ m s}^{-1}$
  - B  $4\text{ m s}^{-1}$
  - C  $6\text{ m s}^{-1}$
  - D  $9\text{ m s}^{-1}$
31. Which of the diagrams below shows the pattern of water waves which passes through a small gap correctly?  
*Antara rajah berikut, yang manakah menunjukkan corak gelombang air yang melalui satu celahan sempit dengan betul ?*



32. Diagram 32 shows a sound wave reflected from a concrete wall.  
*Rajah 32 menunjukkan suatu gelombang bunyi dipantulkan daripada dinding konkrit.*

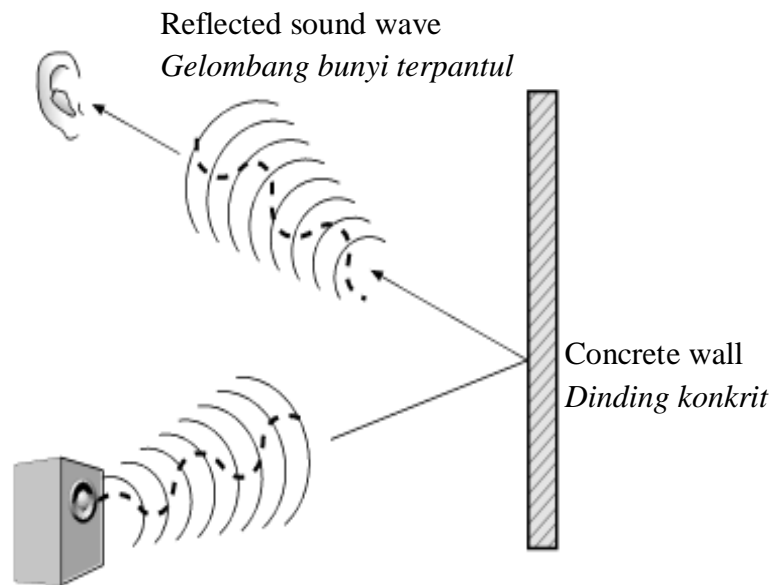


Diagram 32/ Rajah 32

Which comparison is correct about the reflected sound wave and the incident sound wave?  
*Perbandingan manakah yang betul bagi gelombang bunyi terpantul dengan gelombang bunyi tuju?*

- A The speed of the incident wave and the reflected wave is the same  
*Laju bagi gelombang tuju dengan gelombang terpantul adalah sama*
- B The frequency of the incident wave is less than the reflected wave  
*Frekuensi gelombang tuju adalah lebih kecil daripada gelombang terpantul*
- C The angle of the incident wave is greater than the angle of the reflected wave  
*Sudut tuju gelombang adalah lebih besar daripada sudut pantulan gelombang*
- D The wavelength of the incident wave is shorter than the reflected wave  
*Panjang gelombang bagi gelombang tuju adalah lebih pendek daripada gelombang terpantul*

33. Diagram 33.1 shows the Y-input of a cathode ray oscilloscope (CRO) connected to a microphone.

*Rajah 33.1 menunjukkan input-Y sebuah osiloskop sinar katod (OSK) yang disambungkan pada satu mikrofon.*

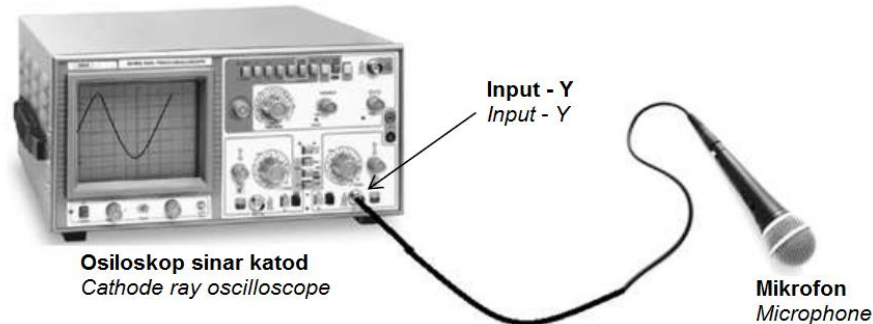


Diagram 33.1/ *Rajah 33.1*

Diagrams 33.2 (a) and (b) show the waveform on the screen of the same CRO from the microphone when two different sound waves of M and N are produced respectively.

*Rajah 33.2 (a) dan (b) menunjukkan bentuk gelombang yang dipaparkan pada skrin OSK yang sama dari mikrofon apabila dua gelombang bunyi M dan N yang berbeza dihasilkan.*

Gelombang bunyi M  
*Sound wave M*

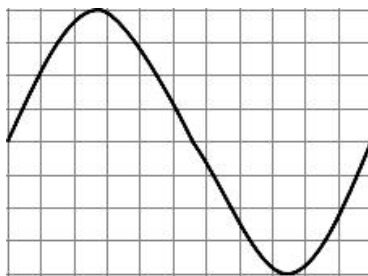


Diagram 33.2 (a)/ *Rajah 33.2 (a)*

Gelombang bunyi N  
*Sound wave N*

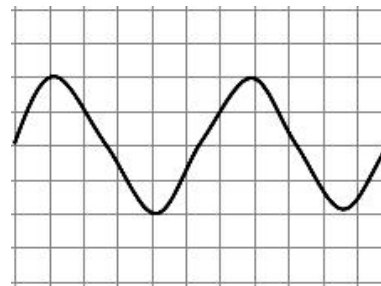


Diagram 33.2 (b)/ *Rajah 33.2 (b)*

Which statement is **correct**?

*Pernyataan manakah yang betul?*

- A M is louder but it has a lower pitch compared to N  
*M lebih nyaring tetapi kurang langsing berbanding N*
- B M is softer but it has a higher pitch compared to N  
*M kurang nyaring tetapi lebih langsing berbanding N*
- C M is louder but it has a higher pitch compared to N  
*M lebih nyaring tetapi lebih langsing berbanding N*
- D M is softer but it has a lower pitch compared to N  
*M kurang nyaring tetapi kurang langsing berbanding N*

34. Diagram 34 shows the electromagnetic spectrum arrangement.  
*Rajah 34 menunjukkan susunan spektrum elektromagnet.*

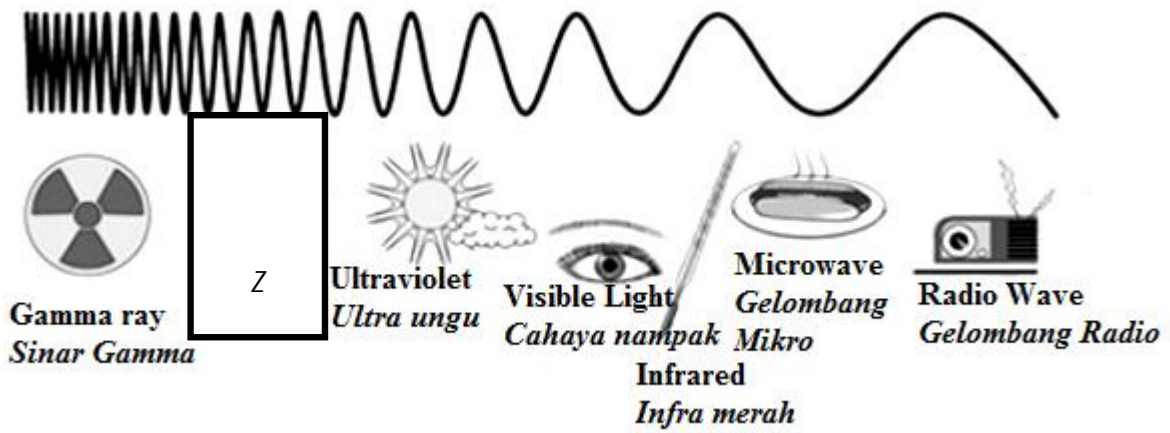


Diagram 34/ Rajah 34

What is the most suitable diagram to replace Z ?  
*Apakah rajah yang paling sesuai untuk menggantikan Z ?*

A



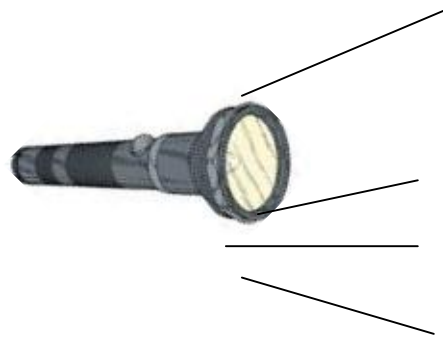
B



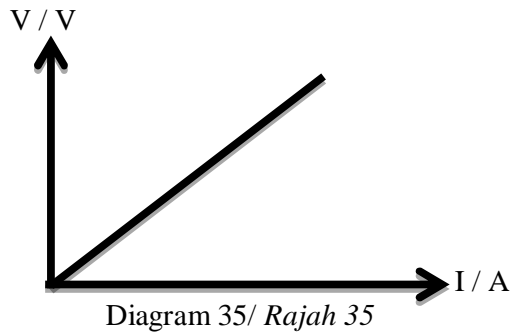
C



D



35. Diagram 35 shows a graph of potential difference against current flow through a conductor.  
*Rajah 35 menunjukkan graf beza keupayaan melawan arus yang mengalir melalui suatu konduktor.*



Gradient of graph to represent a  
*Kecerunan graf mewakili*

- A Electromotive force  
*Daya gerak elektrik*
  - B Resistance  
*Rintangan*
  - C Energy  
*Tenaga*
  - D Power  
*Kuasa*
36. Diagram 36 shows a circuit containing four bulbs, **A**, **B**, **C** and **D**, which are lit at normal brightness. When a bulb is faulty, no current will flow through it.  
 Which bulb, when faulty will cause all the other bulbs **not** to light up?  
*Rajah 36 menunjukkan litar, yang mengandungi empat mentol A, B, C, dan D yang menyala dengan kecerahan normal. Apabila suatu mentol terbakar, tiada arus yang mengalir melaluinya.*  
*Mentol yang manakah apabila terbakar akan menyebabkan semua mentol lain **tidak** menyala?*

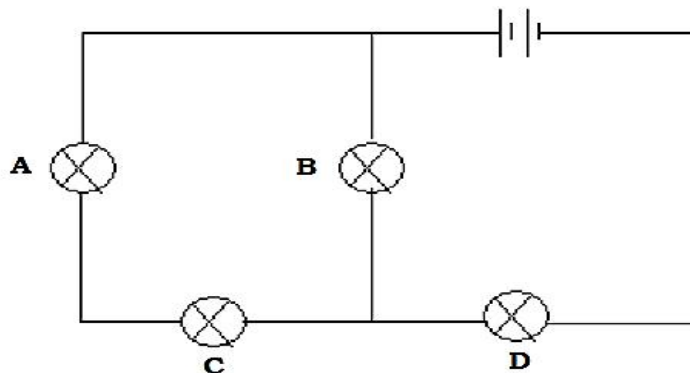


Diagram 36/ Rajah 36



37. Which electrical appliance consumes the most energy?  
*Alat elektrik yang manakah menggunakan tenaga paling banyak?*

A



Blender  
240 V, 300 W, 10 minutes

*Pengisar*  
*240 V, 300 W, 10 minit*

B



Kettle  
240 V, 600 W, 15 minutes

*Cerek*  
*240 V, 600 W, 15 minit*

C



Fan  
240 V, 200 W, 3 Hours

*Kipas*  
*240 V, 200 W, 3 Jam*

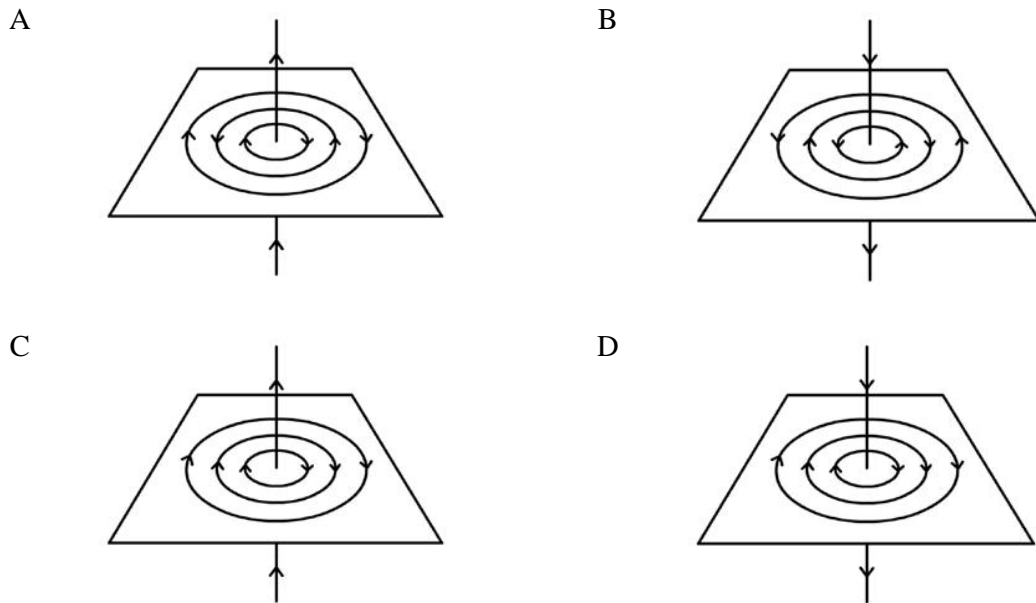
D



Oven  
240 V, 1500 W, 20 minutes

*Ketuhar*  
*240 V, 1500 W, 20 minit*

38. Which of the following diagrams shows the **correct** pattern of magnetic field?  
*Antara rajah-rajah berikut, yang manakah menunjukkan corak medan magnet yang betul?*



39. Diagram 39 shows a simple direct current electric motor. When the switch is turned on, it results catapult field and turns the coil.  
*Rajah 39 menunjukkan sebuah motor elektrik arus terus ringkas. Apabila suis dihidupkan, medan lastik terhasil dan memutarakan gegelung.*

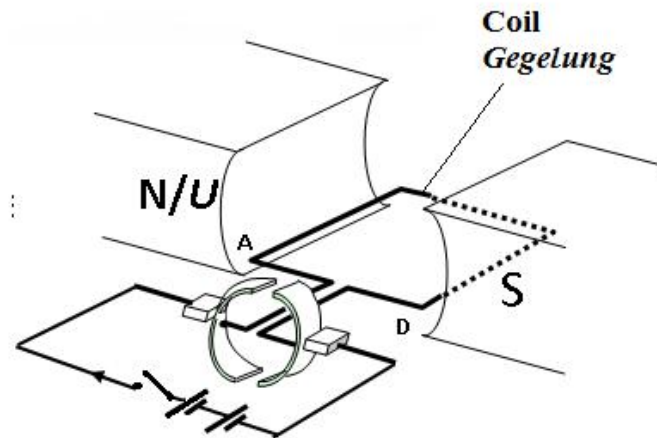
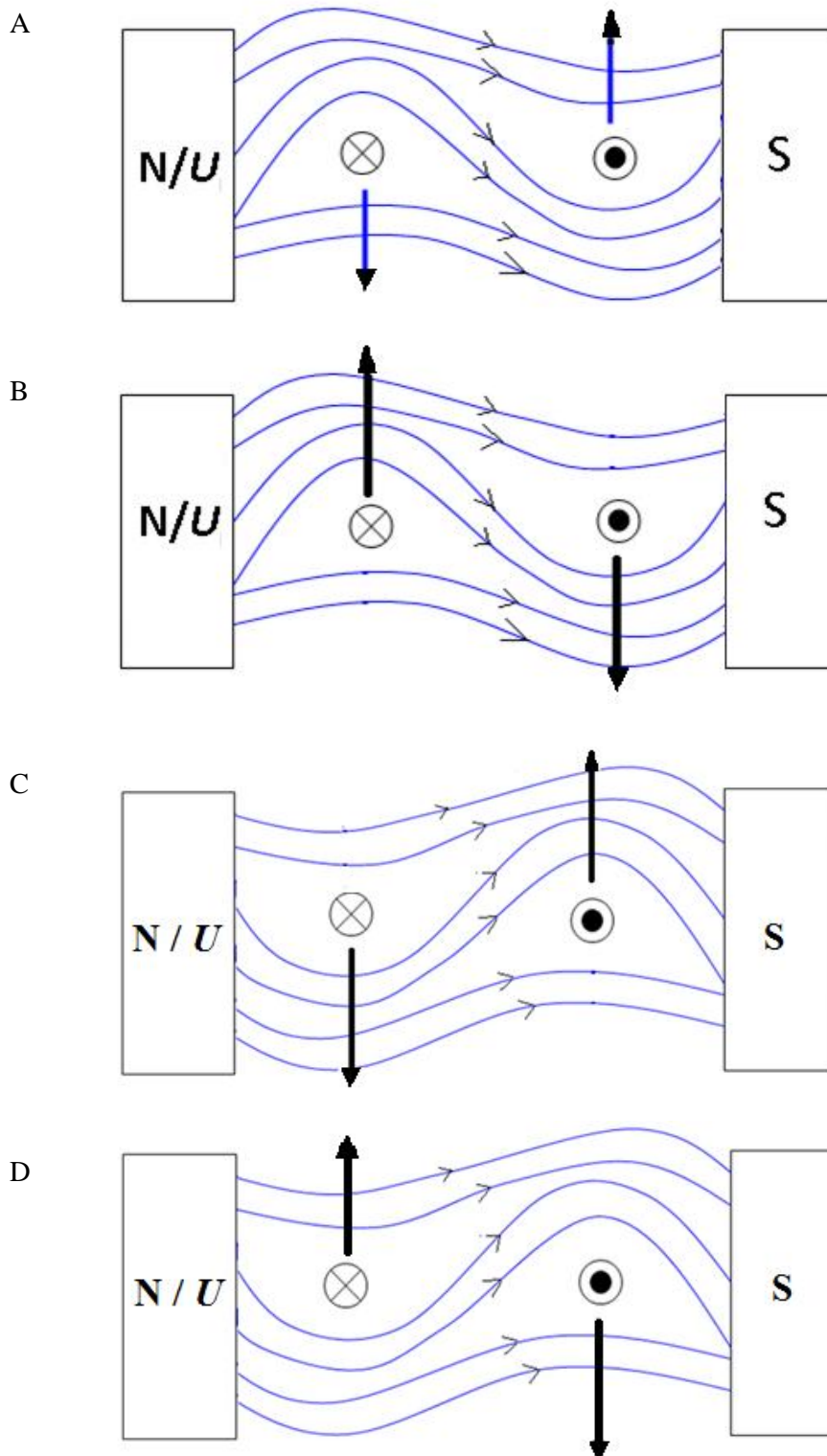


Diagram 39/ Rajah 39

Which of the following shows the correct pattern?

*Antara berikut yang manakah menunjukkan corak medan yang betul?*



40. Diagram 40 shows a current is induced when a conductor is moved through a magnetic field.

*Rajah 40 menunjukkan arus elektrik yang teraruh apabila suatu konduktor digerakkan untuk memotong medan magnet.*

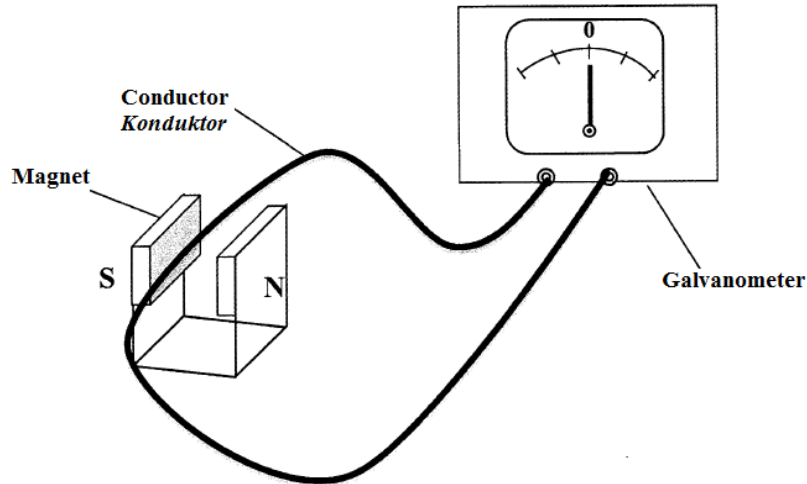


Diagram 40/ Rajah 40

Which action produces a higher deflection of the pointer moving to the right?

*Gerakan manakah yang menghasilkan pesongan yang besar pada penunjuk yang bergerak ke kanan?*

- A Move the wire downwards and use a stronger magnet  
*Gerakkan dawai ke bawah dan gunakan magnet yang lebih kuat*
- B Move the wire upwards and use a stronger magnet  
*Gerakkan dawai ke atas dan gunakan magnet yang lebih kuat*
- C Move the wire downwards and use a thinner conductor  
*Gerakkan dawai ke bawah dan gunakan konduktor yang lebih nipis*
- D Move the wire upwards and use a thinner conductor  
*Gerakkan dawai ke atas dan gunakan konduktor yang lebih nipis*

41. Diagram 41 shows a bar magnet moving into a solenoid.  
*Rajah 41 menunjukkan sebuah magnet bergerak masuk ke dalam suatu solenoid.*

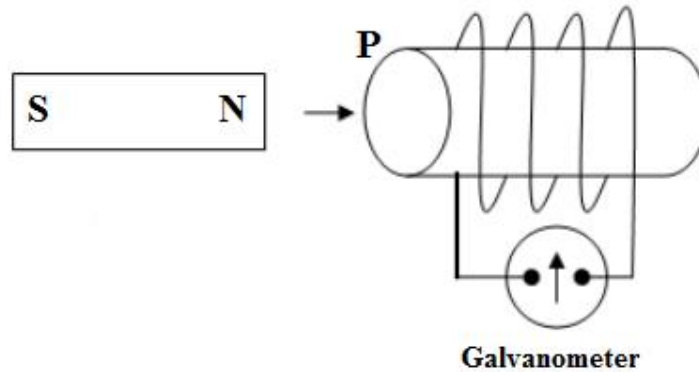


Diagram 41/ *Rajah 41*

The polarity of the solenoid at P and the deflection of the galvanometer are  
*Kekutuban pada hujung P solenoid dan pesongan jarum galvanometer ialah*

	<u>Polarity of the solenoid at P</u> <i>Kekutuban solenoid di P</i>	<u>Deflection of the Galvanometer</u> <i>Pesongan Galvanometer</i>
A	North <i>Utara</i>	to the right <i>ke kanan</i>
B	North <i>Utara</i>	to the left <i>ke kiri</i>
C	South <i>Selatan</i>	to the right <i>ke kanan</i>
D	South <i>Selatan</i>	to the left <i>ke kiri</i>

42. Diagram 42 shows the structure of an ideal transformer.  
*Rajah 42 menunjukkan struktur sebuah transformer unggul.*

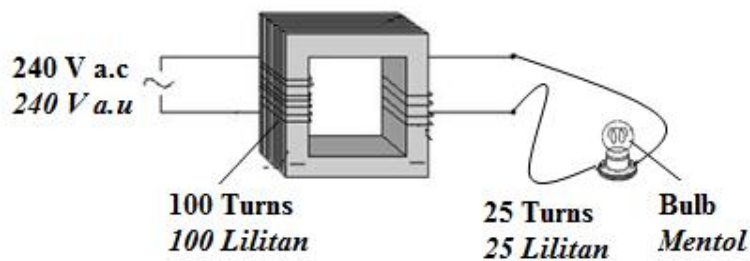


Diagram 42/ *Rajah 42*

What is the potential difference across the bulb?  
*Berapakah bezakeupayaan merentasi mentol itu?*

- A 25 V
- B 30 V
- C 60 V
- D 100 V

43. Diagram 43 shows the process of electrons escaping from the surface of a heated metal.  
*Rajah 43 menunjukkan proses elektron terbebas daripada permukaan logam yang dipanaskan.*

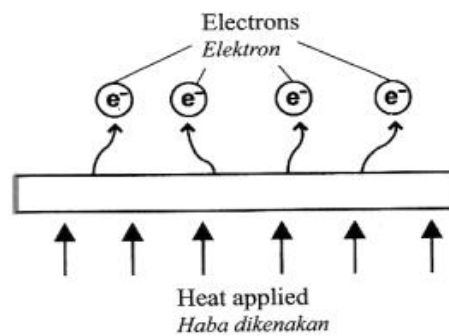
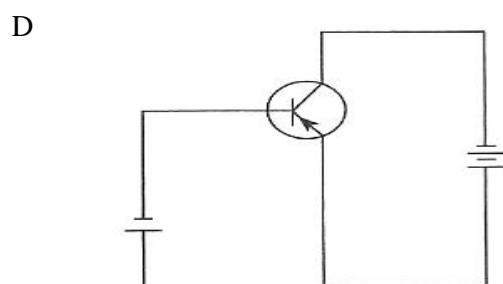
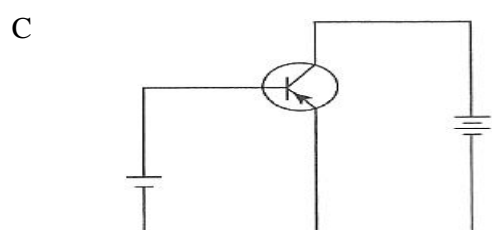
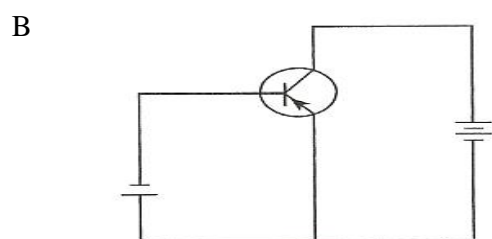
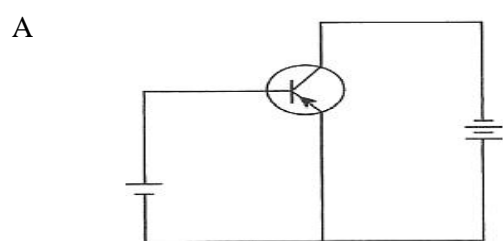


Diagram 43/ Rajah 43

What is this process?  
*Apakah proses ini?*

- A Radiation  
*Radiasi*
- B Evaporation  
*Penyejatan*
- C Rectification  
*Rektifikasi*
- D Thermionic emission  
*Pancaran termion*

44. Which of the following will light up the bulb?  
*Antara yang berikut, yang manakah boleh menyalakan mentol?*



45. Diagram 45 shows the symbol for a transistor.  
*Rajah 45 menunjukkan simbol bagi suatu transistor.*

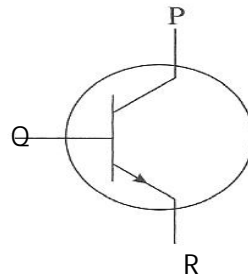


Diagram 45/ *Rajah 45*

What are the terminals P, Q and R?  
*Apakah terminal P, Q dan R?*

	<b>P</b>	<b>Q</b>	<b>R</b>
A	Collector <i>Pengumpul</i>	Emitter <i>Pengeluar</i>	Base <i>Tapak</i>
B	Collector <i>Pengumpul</i>	Base <i>Tapak</i>	Emitter <i>Pengeluar</i>
C	Base <i>Tapak</i>	Collector <i>Pengumpul</i>	Emitter <i>Pengeluar</i>
D	Emitter <i>Pengeluar</i>	Base <i>Tapak</i>	Collector <i>Pengumpul</i>

46. Diagram 46 shows a combination circuit of logic gates.  
*Rajah 46 menunjukkan sebuah litar gabungan get logik.*

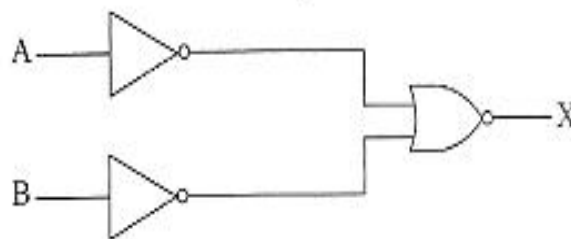
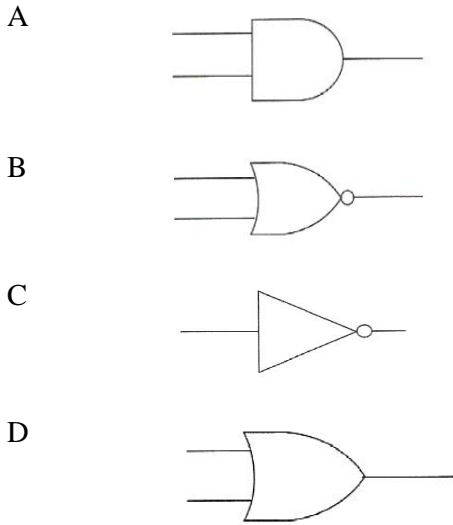


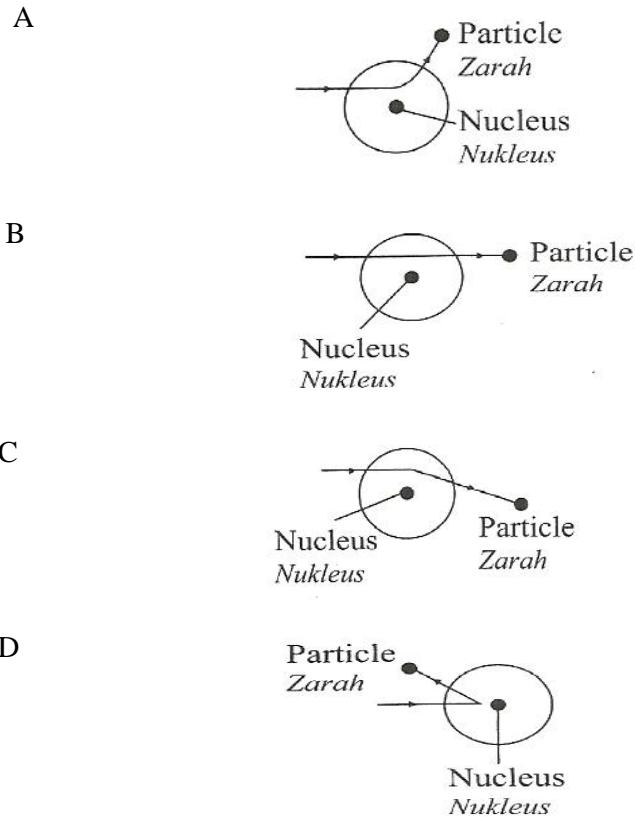
Diagram 46/ *Rajah 46*



The combination of the logic gates above equivalent to  
*Gabungan get logik di atas adalah setara dengan*



47. A negatively charge particle moves towards a nucleus of an atom.  
 Which of the following diagrams shows the correct path of the particle?  
*Satu zarah bercas negatif bergerak menuju kearah nukleus satu atom.*  
*Antara rajah berikut, yang manakah menunjukkan lintasan yang betul bagi zarah itu?*



48. Diagram 48 shows three types of radioactive rays, X, Y and Z, directed towards a sheet of paper, a sheet of aluminium and a sheet of lead.  
*Rajah 48 menunjukkan tiga jenis sinaran radioaktif, X, Y and Z, dihalakan kepada kepingan kertas, kepingan aluminium dan kepingan plumbum.*

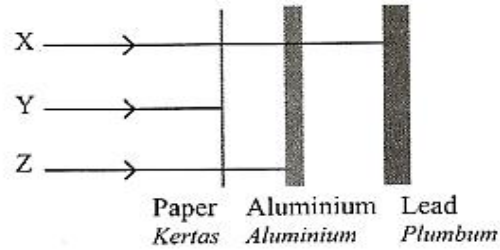


Diagram 48/ *Rajah 48*

Which of the following rays are represented by X, Y and Z?  
*Antara sinaran yang berikut, yang manakah diwakili oleh X, Y dan Z?*

	<b>X</b>	<b>Y</b>	<b>Z</b>
A	Alpha <i>Alfa</i>	Gamma <i>Gama</i>	Beta <i>Beta</i>
B	Beta <i>Beta</i>	Alpha <i>Alfa</i>	Gamma <i>Gama</i>
C	Gamma <i>Gama</i>	Alpha <i>Alfa</i>	Beta <i>Beta</i>
D	Gamma <i>Gama</i>	Beta <i>Beta</i>	Alpha <i>Alfa</i>

49. Diagram 49 shows the arrangement of a radioactive source and a detector to monitor the thickness of thin aluminium sheets in a factory.  
*Rajah 49 menunjukkan susunan satu sumber radioaktif dan satu alat pengesan untuk memantau ketebalan kepingan aluminium nipis di dalam sebuah kilang.*

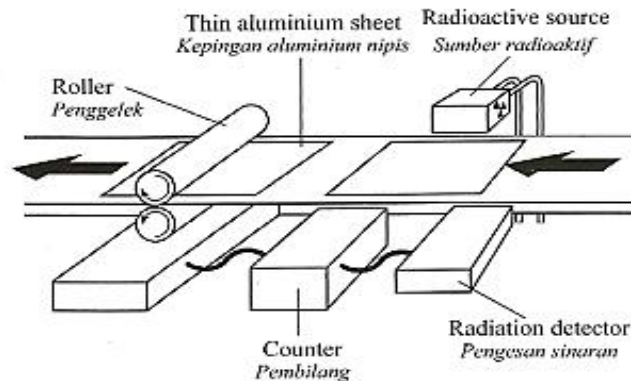


Diagram 49/ *Rajah49*

Which of the following would be the most suitable to be used as the radioactive source?  
*Antara yang berikut, yang manakah adalah paling sesuai digunakan sebagai sumber radioaktif itu?*

	<b>Radiation emitted</b> <i>Sinaran yang dipancar</i>	<b>Half life</b> <i>Setengah hayat</i>
A	alpha <i>alfa</i>	5 days <i>5 hari</i>
B	alpha <i>alfa</i>	5 years <i>5 tahun</i>
C	beta <i>beta</i>	5 days <i>5 hari</i>
D	beta <i>beta</i>	5 years <i>5 tahun</i>

50. Which of the following is correct?

*Antara yang berikut, yang manakah benar?*

- A Strong radioactive substances can be handled using a pair of tongs.  
*Bahan radioaktif kuat boleh dikendalikan menggunakan sepasang penyepit.*
- B Workers handling radioactive substances must wear special badges which detect the amount of radiation they are exposed to.  
*Pekerja yang mengendalikan bahan radioaktif perlu menggunakan lencana khas yang mengesan jumlah radiasi yang terdedah kepada mereka.*
- C Materials that emit only alpha particles must be kept in thick lead containers.  
*Bahan yang mengeluarkan zarah alfa sahaja yang disimpan di dalam bekas plumbum yang tebal.*
- D Radioactive materials are safe to handle after two half-lives.  
*Bahan radioaktif selamat digunakan selepas dua separuh hayat.*

**END OF QUESTION PAPER**  
**KERTAS SOALAN TAMAT**