

- 1 Diagram 1 shows the level of a liquid in a measuring cylinder.
Rajah 1 menunjukkan aras satu cecair dalam silinder penyukat.

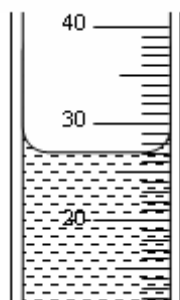


Diagram 1
Rajah 1

Which of the following is the correct reading?
Antara yang berikut, yang manakah bacaan yang betul?

- A 25 ml
- B 27 ml
- C 29 ml
- D 31 ml

- 2 Diagram 2 shows an organism.
Rajah 2 menunjukkan satu organisma.

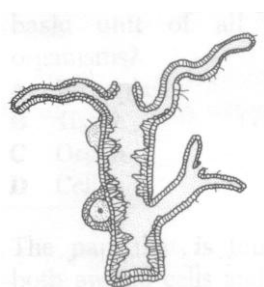


Diagram 2
Rajah 2

Which of the following is true about the organism?
Antara yang berikut, yang manakah benar tentang organisma itu?

- A It is a multicellular organism
la adalah satu organisma multisel
- B It is a unicellular organism
la adalah satu organisma unisel
- C It reproduces by forming spores
la membiak dengan membentuk spora
- D It makes its own food
la membuat makanan sendiri

- 3 Diagram 3 shows organisms J, K, L and M.
Rajah 3 menunjukkan organisma J, K, L dan M.

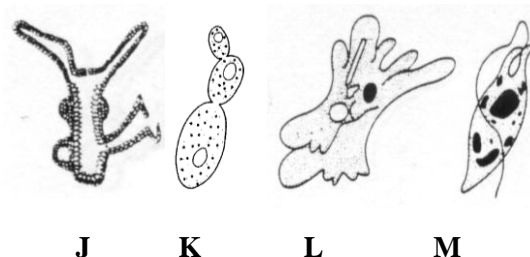


Diagram 3
Rajah 3

Which of the following represents J, K, L and M?

Antara yang berikut, yang manakah mewakili J, K, L dan M?

	J	K	L	M
A	Euglena <i>Euglena</i>	Hydra <i>Hidra</i>	Amoeba <i>Ameba</i>	Yeast <i>Yis</i>
B	Hydra <i>Hidra</i>	Amoeba <i>Ameba</i>	Yeast <i>Yis</i>	Euglena <i>Euglena</i>
C	Hydra <i>Hidra</i>	Yeast <i>Yis</i>	Amoeba <i>Ameba</i>	Euglena <i>Euglena</i>
D	Amoeba <i>Ameba</i>	Euglena <i>Euglena</i>	Yeast <i>Yis</i>	Hydra <i>Hidra</i>

- 4 Which of the following is true about the particles of copper at room temperature?
Antara yang berikut, yang manakah benar mengenai zarah-zarah kuprum pada suhu bilik?

- A Can move freely in any direction
Boleh bergerak bebas dalam semua arah
- B Far apart and can move freely
Berjauhan dan boleh bergerak bebas
- C Can move in one direction only
Boleh bergerak dalam satu arah sahaja
- D Close together and can only vibrate about their fixed positions
Rapat dan hanya boleh bergetar pada kedudukan yang tetap

- 5 Table 1 shows the classification of elements into metals and non-metals.
Jadual 1 menunjukkan pengelasan unsur-unsur kepada logam dan bukan logam.

Metals Logam	Non-metals Bukan logam
Aluminium Aluminium Copper Kuprum	Sulphur Sulfur Phosphorus Fosforus
J	K

Table 1
Jadual 1

Which of the following represents **J** and **K**?
Antara yang berikut, yang manakah mewakili J dan K?

	J	K
A	Gold Emas	Lead Plumbum
B	Zinc Zink	Carbon Karbon
C	Iodine Iodin	Silver Perak
D	Oxygen Oksigen	Chlorine Klorin

6. Which of the following percentage composition of gases in the air is correct?
Antara peratus kandungan gas-gas di dalam udara yang berikut, yang manakah benar?

	Gas Gas	Percentage Peratus
A	Carbon dioxide Karbon dioksida	0.3 %
B	Inert gases Gas nadir	9.7 %
C	Oxygen/Oksigen	12 %
D	Nitrogen/ Nitrogen	78 %

- 7 Diagram 4 shows a candle burning in atmospheric air.
Rajah 4 menunjukkan sebatang lilin sedang terbakar dalam udara atmosfera

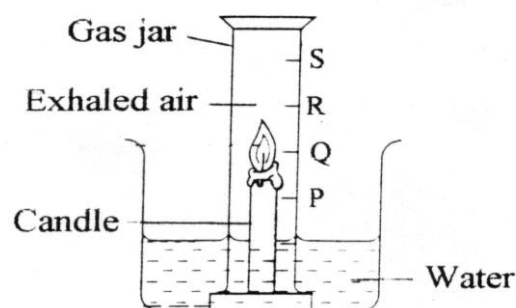


Diagram 4
Rajah 4

What are the observations at the end of the experiment?
Apakah pemerhatian di akhir eksperimen ini?

- A The candle extinguishes and the water level rises to **S**
Lilin padam dan aras air meningkat ke S
 B The candle continues burning and the water level remains unchanged
Lilin terus menyala dan aras air tidak berubah
 C The candle extinguishes and the water level rises to **P**
Lilin padam dan aras air meningkat ke P
 D The candle extinguishes and the water level remains unchanged
Lilin padam dan aras air tidak berubah

- 8 Diagram 5 shows an experiment on respiration of a cockroach. The limewater turns cloudy after 30 minutes.

Rajah 5 menunjukkan satu eksperimen tentang respirasi seekor lipas. Air kapur menjadi keruh selepas 30 minit

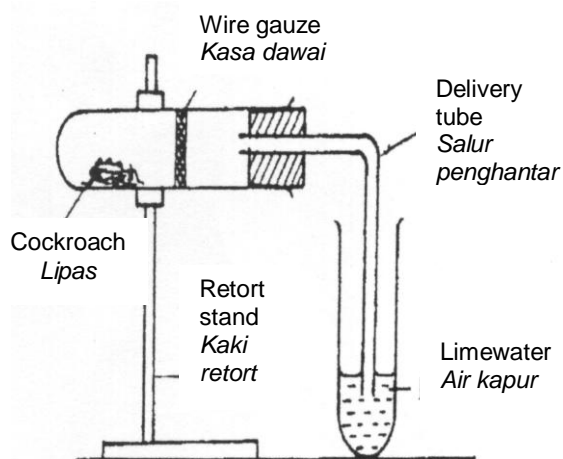


Diagram 5
Rajah 5

Which of the following is true about the experiment?

Antara yang berikut, yang manakah benar tentang eksperimen itu?

- A Ammonia has been released
Ammonia telah dibebaskan
- B Oxygen has been released
Oksigen telah dibebaskan
- C Sulphur dioxide has been released
Sulfur dioksida telah dibebaskan
- D Carbon dioxide has been released
Karbon dioksida telah dibebaskan

- 9 Which of the following energy sources is renewable?

Antara sumber tenaga berikut, yang manakah boleh diperbaharui?

- A Radioactive substances
Bahan Radioaktif
- B Natural gas
Gas asli
- C Coal
Arang
- D Sun
Matahari

- 10 Diagram 6 shows a metal ball which cannot pass through its ring after being heated.
Rajah 6 menunjukkan sebiji bola besi tidak boleh melalui gelang itu selepas dipanaskan.

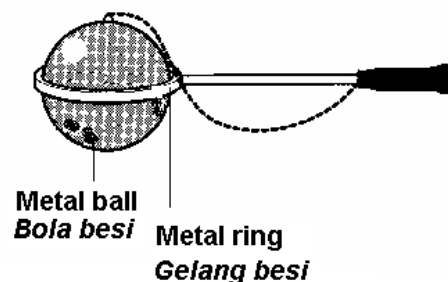


Diagram 6
Rajah 6

Which of the following had happened to the particles of the metal ball?

Manakah antara berikut yang berlaku kepada zarah bola besi?

- A The shape of the particles changed
Bentuk zarah-zarah telah berubah
- B The size of the particles increased
Saiz zarah-zarah telah bertambah
- C The number of the particles increased
Jumlah zarah-zarah telah bertambah
- D The space between the particles increased
Ruang antara zarah-zarah telah bertambah

- 11 Diagram 7 shows a vision defect
Rajah 7 menunjukkan satu kecacatan penglihatan.

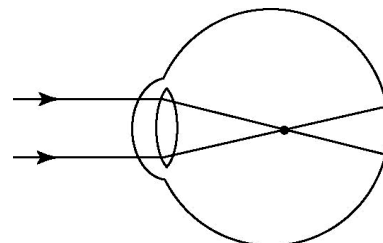


Diagram 7.
Rajah 7

Name the vision defect.

Namakan kecacatan penglihatan ini.

- A Astigmatism
Astigmatisma
- B Short sightedness
Rabun jauh
- C Long sightedness
Rabun dekat
- D Colour blindness
Rabun warna

12 Which of the following animals has monocular vision?

Antara haiwan berikut, yang manakah mempunyai penglihatan monokular?

A



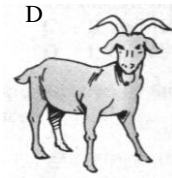
B



C



D



13 Diagram 8 shows the apparatus used to investigate the rate of absorption of digested food substances.

Rajah 8 menunjukkan radas yang digunakan untuk mengkaji kadar penyerapan makanan yang dicernakan.

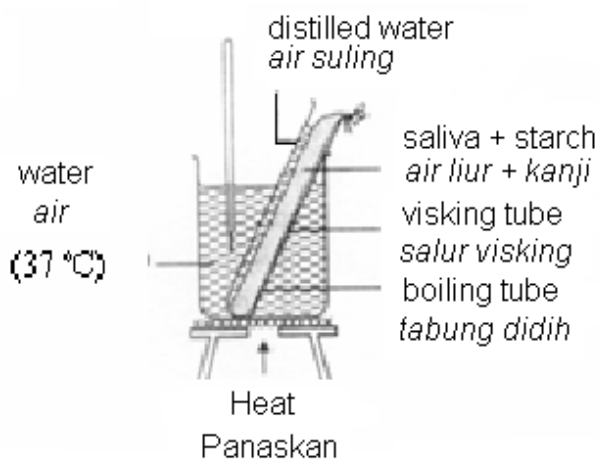


Diagram 8
Rajah 8

Which of the following shows a positive result when it is tested on the distilled water in the boiling tube?

Antara yang berikut, yang manakah menunjukkan keputusan positif bila air suling di dalam tabung didih diuji?

- A Benedict's solution
Larutan Benedict
- B Millon's reagent
Reagen Millon
- C Iodine solution
Larutan iodine
- D Filter paper
Kertas turas

14 Diagram 9 shows a food pyramid.
Rajah 9 menunjukkan pyramid makanan.

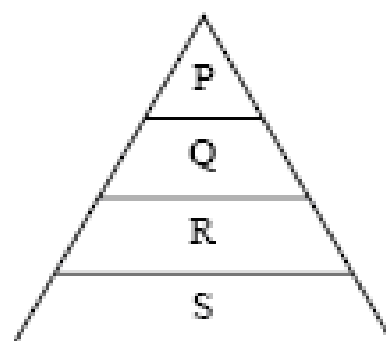


Diagram 9
Rajah 9

Which types of food are found in level **S**?
*Jenis makanan yang manakah yang dijumpai dalam aras **S**?*

- A Fruits and vegetables
Buah-buahan dan sayur-sayuran
- B Meat and proteins
Daging dan protein
- C Cereals and rice
Bijirin dan beras
- D Fats and sugar
Lemak dan gula

- 15 The following information shows the characteristics of a group of plants.
Maklumat berikut menunjukkan ciri-ciri satu kumpulan tumbuhan.

- Leaves have parallel veins
Daun ada urat daun selari
- Stem is soft
Batang lembut
- Fibrous root system
Sistem akar serabut

Which of the following plants has such characteristics?

Antara tumbuhan berikut, yang manakah mempunyai ciri-ciri tersebut?

- A Hibiscus
Bunga raya
- B Balsam
Keembong
- C Sugar cane
Tebu
- D Papaya
Betik

- 16 Which of the following interactions can be used in the biological control?
Antara interaksi berikut, yang manakah boleh digunakan dalam kawalan biologi?

- A Parasitism
Parasitisme
- B Commensalism
Komensalisme
- C Competition
Persaingan
- D Prey-predator
Mangsa-pemangsa

- 17 Which of the following shows living things are dependent on non-living things?
Antara berikut, yang manakah menunjukkan benda hidup bergantung dengan benda tidak hidup?

- A Plants carrying out photosynthesis
Tumbuhan menjalankan fotosintesis
- B Plants competing for space
Tumbuhan bersaing untuk ruang hidup
- C Animals eating plants
Haiwan makan tumbuhan
- D Animals eating other animals
Haiwan makan haiwan yang lain

- 18 The following information shows the human activities.
Maklumat berikut menunjukkan aktiviti-aktiviti manusia

- Constructing hydroelectric dams
Pembinaan empangan hidroelektrik
- Deforestation
Pembalakan
- Mining
Perlombongan

What do the above activities have in common?
Apakah persamaan aktiviti-aktiviti di atas?

- A They help conserve biodiversity
Menolong memelihara biodiversiti
- B They lead to species extinction
Mendorong kepupusan spesies
- C They lead to reforestation
Mendorong penghutanan semula
- D They are ways of extracting natural resources
Pemprosesan sumber semulajadi

- 19 Which of the following form of copper sulphate will dissolve fastest in water?
Antara bentuk kuprum sulfat berikut, yang manakah akan melarut paling cepat dalam air?

	Form of copper sulphate <i>Bentuk kuprum sulfat</i>	Volume of water <i>Isi padu air (cm³)</i>	Temperature <i>Suhu (°C)</i>
A	10g powder <i>10g serbuk</i>	100	30
B	10g powder <i>10g serbuk</i>	100	40
C	10g powder <i>10g serbuk</i>	200	50
D	10g crystal <i>10g hablur</i>	200	50

- 20 What is the process of breaking down water into its elements?

Apakah nama proses menguraikan air kepada unsur-unsurnya?

- A Electrolysis
Elektrolisis
- B Boiling
Pendidihan
- C Using magnet
Menggunakan magnet
- D Evaporation
Penyejatan

- 21 Diagram 10 shows a bicycle tyre connected to a hand pump.

Rajah 10 menunjukkan tayar basikal dihubungkan kepada sebuah pam tangan.

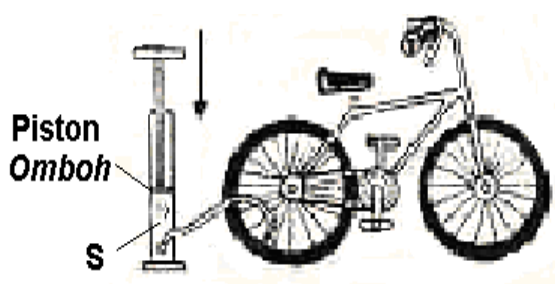


Diagram 10
Rajah 10

What will happen when the piston is pushed downwards?

Apakah akan terjadi bila omboh ditolak ke bawah?

- A The pressure of the air in **S** will not change
Tekanan udara dalam S tidak akan berubah
- B The pressure of the air in **S** will increase
Tekanan udara dalam S akan bertambah
- C Air from the tyre will flow into the pump
Udara dari tayar akan mengalir ke dalam pam
- D The volume of the air in **S** will increase
Isi padu udara dalam S akan bertambah

22. Diagram 11 shows a student pulling his bag through a distance of 2.0 m with a force of 40N.

Rajah 11 menunjukkan seorang pelajar menarik begnya sejauh 2.0 m dengan menggunakan daya 40N.

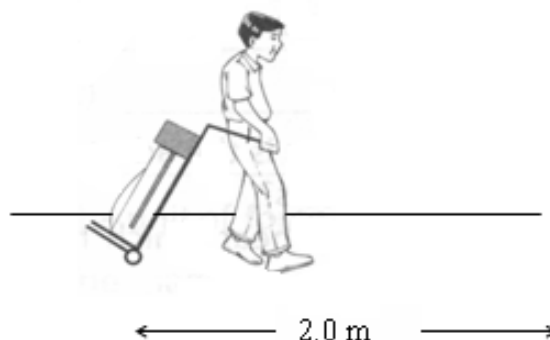


Diagram 11
Rajah 11

What is the work done by the student?

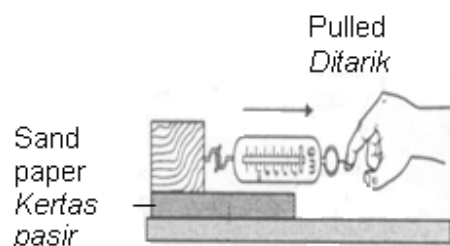
Berapakah kerja yang dilakukan oleh pelajar itu?

- A 20 J
- B 38 J
- C 42 J
- D 80 J

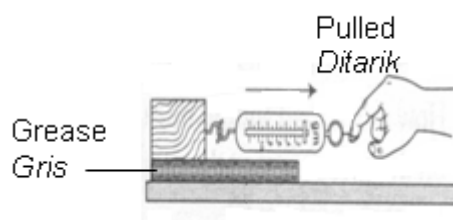
- 23 Which of the following uses the greatest force?

Antara aktiviti berikut, yang manakah menggunakan daya yang paling besar?

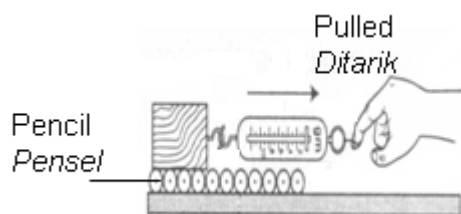
A



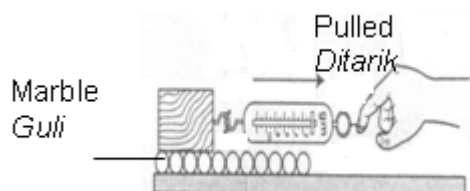
B



C



D



- 24 Diagram 12 shows a herbaceous plant with a special structure **R**.
Rajah 12 menunjukkan satu tumbuhan herba dengan satu struktur khas R.

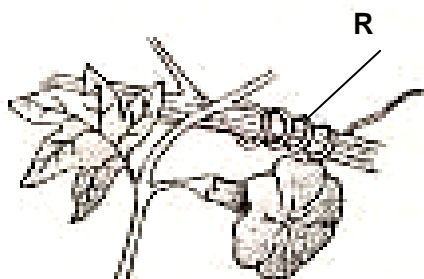


Diagram 12
Rajah 12

Which of the following represents **R**?
Antara yang berikut, yang manakah mewakili R?

- A Buttress root
Akar banir
- B Clasping root
Akar cengkam
- C Tendril
Sulur paut
- D Thorn
Duri

- 25 Whale is a huge animal but it can move easily in water because
Ikan paus adalah seekor haiwan yang besar tetapi ia boleh bergerak dengan mudah dalam air kerana

- A its skin acts as an exoskeleton
kulitnya bertindak sebagai rangka luar
- B water buoyancy supports its weight
apungan air menyokong beratnya
- C its weight is supported by its huge endoskeleton
beratnya disokong oleh rangka dalamnya yang besar
- D the fluid in its body exerts outwards pressure
bendalir dalam badannya mengenakan tekanan ke luar

- 26 Diagram 13 shows designs of three trolleys, **J**, **K** and **L**, made from the same materials.
Rajah 13 menunjukkan reka bentuk tiga troli, J, K dan L, yang dibuat daripada bahan yang sama.

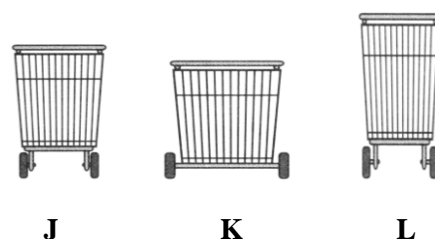


Diagram 13
Rajah 13

Which of the following is the correct sequence for increasing order of stability?

Antara yang berikut, yang manakah urutan yang betul bagi susunan kestabilan menaik?

- A J, K, L
- B K, J, L
- C L, K, J
- D L, J, K

- 27 Diagram 14 shows a balanced lever system.
Rajah 14 menunjukkan satu sistem tuas yang seimbang.

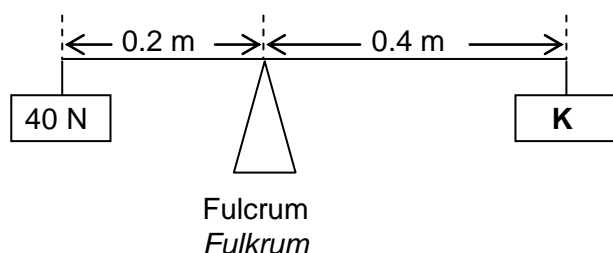


Diagram 14
Rajah 14

What is the load of **K**?
Berapakah beban **K**?

- A 20 N
B 40 N
C 60 N
D 80 N
- 28 How does oxygen in the alveolus enter the blood?
Bagaimanakah oksigen dalam alveolus memasuki darah?
- A By osmosis
Melalui osmosis
B By reverse osmosis
Melalui osmosis berbalik
C By diffusion
Melalui resapan
D By transpiration
Melalui transpirasi
- 29 Diagram 15 shows the cross-section of a stem.
Rajah 15 menunjukkan keratan rentas batang

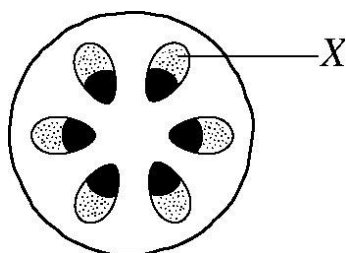


Diagram 15
Rajah 15

What is the part labelled **X**?
Apakah bahagian yang berlabel **X**?

- A Phloem
Floem
B Xylem
Xilem
C Stomata
Stomata
D Epidermis
Epidermis
- 30 Which of the following is **not** a human excretory organ?
Antara berikut yang manakah **bukan** organ perkumuhan manusia?
- A Kidney
Ginjal
B Skin
Kulit
C Nose
Hidung
D Lung
Paru-paru
- 31 Oxygen is an excretory product of plant. Oxygen is removed by the process
Oksigen ialah bahan kumuh tumbuhan. Oksigen disingkirkan melalui proses
- A transpiration
transpirasi
B photosynthesis
fotosintesis
C osmosis
osmosis
D respiration
respirasi

- 32 Diagram 16 shows the longitudinal section of a flower.

Rajah 16 menunjukkan keratan memanjang sekuntum bunga.

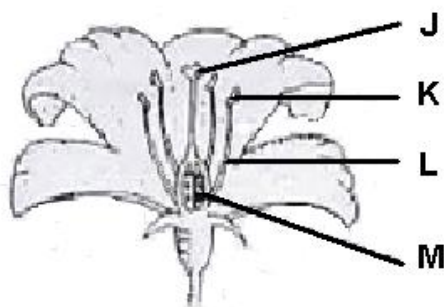


Diagram 16
Rajah 16

Which of the following parts form the male reproductive system?

Antara bahagian-bahagian berikut, yang manakah membentuk sistem pembiakan jantan?

- A J and M
J dan M
- B J and L
J dan L
- C K and L
K dan L
- D K and M
K dan M
- 33 When does a human being experience the fastest growth rate?
- Bilakah manusia mengalami kadar pertumbuhan yang paling cepat?*
- A During old age
Semasa tua
- B During infancy
Peringkat bayi
- C During adolescence
Semasa remaja
- D During childhood
Semasa kanak-kanak

- 34 Table 2 shows the information about petroleum distillation.

Jadual 2 menunjukkan maklumat tentang penyulingan berperingkat.

Temperature <i>Suhu</i>	Colour of distillate <i>Warna hasil sulingan</i>	Viscosity <i>Kelikatan</i>	Soot quantity <i>Kuantiti jelaga</i>
Below 80°C <i>Di bawah 80°C</i>	Colourless <i>Tiada warna</i>	Very low viscosity <i>Sangat kurang likat</i>	None <i>Tiada</i>
81°C - 180°C	Light yellow <i>Kuning muda</i>	Low viscosity <i>Kurang likat</i>	A little <i>Sedikit</i>
181°C- 250°C	Yellow <i>Kuning</i>	Viscous <i>Likat</i>	A large amount <i>Banyak</i>
More than 250 °C <i>Lebih daripada 250 °C</i>	Brown <i>Perang</i>	Very viscous <i>Sangat likat</i>	A very large amount <i>Sangat banyak</i>

Table 2
Jadual 2

Which of the following is true about the distillation?

Antara yang berikut, yang manakah benar tentang penyulingan itu?

- A The higher the boiling point, the more soot is produced
Semakin tinggi takat didih, semakin banyak jelaga
- B The higher the boiling point, the lower the viscosity
Semakin tinggi takat didih, semakin rendah kelikatan
- C The higher the boiling point, the paler the colour of the distillate
Semakin tinggi takat didih, semakin pucat warna hasil sulingan
- D As the boiling point increases, the distillate becomes more combustible
Apabila takat didih meningkat, hasil sulingan semakin mudah terbakar

- 35 Diagram 17 is the apparatus set-up to show the effect of heat on copper sulphide. Gas **J** produced shows positive effect towards solution **K**.
*Rajah 17 adalah susunan radas untuk menunjukkan kesan haba ke atas kuprum sulfida. Gas **J** yang terhasil menunjukkan kesan positif terhadap larutan **K**.*

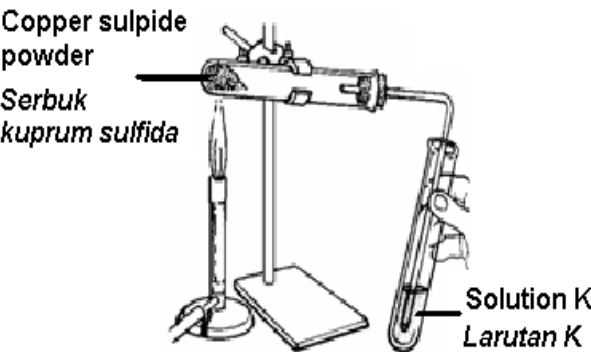


Diagram 17
Rajah 17

Which of the following represents gas **J** and solution **K**?
*Antara yang berikut, yang manakah mewakili gas **J** dan larutan **K**?*

	J	K
A	Carbon dioxide <i>Karbon dioksida</i>	Limewater <i>Air kapur</i>
B	Sulphur dioxide <i>Sulfur dioksida</i>	Limewater <i>Air kapur</i>
C	Carbon dioxide <i>Karbon dioksida</i>	Acidified potassium manganate (VII) solution <i>Larutan berasid kalium manganat (VII)</i>
D	Sulphur dioxide <i>Sulfur dioksida</i>	Acidified potassium manganate (VII) solution <i>Larutan berasid kalium manganat (VII)</i>

36. Diagram 18 shows polystyrene balls, **J**, **K**, **L** and **M** that have been charged through friction and hung in pairs.
*Rajah 18 menunjukkan bebola polisterina, **J**, **K**, **L** dan **M** yang telah dicaskan secara geseran dan digantung secara berpasangan.*

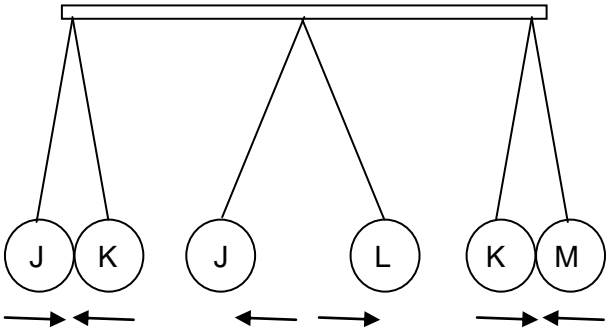


Diagram 18
Rajah 18

What conclusion can be made about the charges of balls **J**, **K**, **L** and **M**?
*Apakah kesimpulan yang boleh dibuat tentang cas bebola **J**, **K**, **L** dan **M**?*

	J	K	L	M
A	Negative <i>Negatif</i>	Negative <i>Negatif</i>	Positive <i>Positif</i>	Positive <i>Positif</i>
B	Negative <i>Negatif</i>	Positive <i>Positif</i>	Negative <i>Negatif</i>	Negative <i>Negatif</i>
C	Positive <i>Positif</i>	Negative <i>Negatif</i>	Negative <i>Negatif</i>	Negative <i>Negatif</i>
D	Positive <i>Positif</i>	Positive <i>Positif</i>	Negative <i>Negatif</i>	Negative <i>Negatif</i>

37. Diagram 19 shows a 3-pin plug.
Rajah 19 menunjukkan satu palam 3 pin.

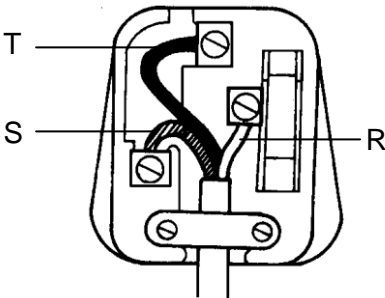


Diagram 19
Rajah 19

Which of the following represents **R**, **S** and **T**?

Antara yang berikut, yang manakah mewakili R, S dan T?

	R	S	T
A	Neutral wire <i>Dawai neutral</i>	Earth wire <i>Dawai bumi</i>	Live wire <i>Dawai hidup</i>
B	Live wire <i>Dawai hidup</i>	Neutral wire <i>Dawai neutral</i>	Earth wire <i>Dawai bumi</i>
C	Earth wire <i>Dawai bumi</i>	Live wire <i>Dawai hidup</i>	Neutral wire <i>Dawai neutral</i>
D	Live wire <i>Dawai hidup</i>	Earth wire <i>Dawai bumi</i>	Neutral wire <i>Dawai neutral</i>

38. Diagram 20 shows an electricity transmission and distribution system from a power station to light industries.
Rajah 20 menunjukkan satu sistem penghantaran dan pengagihan tenaga elektrik dari stesen janakuasa ke kawasan industri ringan.

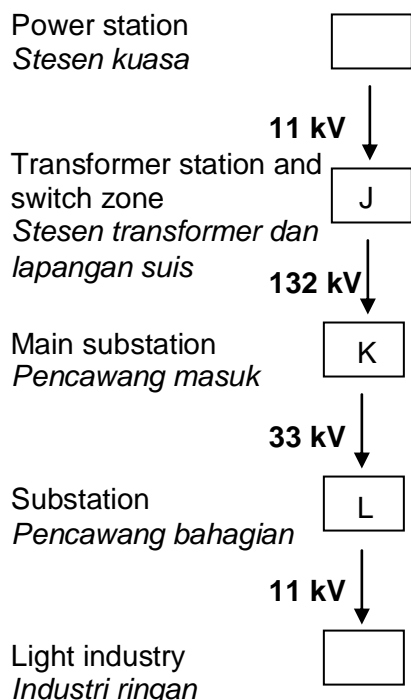


Diagram 20
Rajah 20

Which of the following is true about transformers J, K and L?
 Manakah antara berikut yang betul tentang transformer J, K dan L?

	J	K	L
A	Step-up <i>Injak naik</i>	Step-down <i>Injak turun</i>	Step-down <i>Injak turun</i>
B	Step-down <i>Injak turun</i>	Step-up <i>Injak naik</i>	Step-up <i>Injak naik</i>
C	Step-up <i>Injak naik</i>	Step-up <i>Injak naik</i>	Step-up <i>Injak naik</i>
D	Step-down <i>Injak turun</i>	Step-down <i>Injak turun</i>	Step-down <i>Injak turun</i>

39. Which of the following is true about stars and galaxies in our Universe?
 Antara yang berikut, yang manakah benar tentang bintang dan galaksi dalam Alam Semesta kita?

- A Our Solar System is located in the Milky Way
Sistem Suria kita berada dalam Bima Sakti
- B The Milky Way has an irregular shape
Bima Sakti mempunyai bentuk tak teratur
- C The atmosphere of the Sun consists of photosphere and chromosphere only
Atmosfera Matahari terdiri daripada fotosfera dan kromosfera sahaja
- D Stars have the same temperature
Bintang-bintang mempunyai suhu yang sama

40

“Father of Modern Astronomy”
 “Bapa Astronomi Moden”

Who is mention in the statement above?
 Siapakah yang dinyatakan dalam pernyataan di atas?

- A Neil Armstrong
- B Nicholas Copernicus
- C Johannes Kepler
- D Al-Battani

END OF QUESTION PAPER
 KERTAS SOALAN TAMAT

Section A
Bahagian A

[40 marks]
[40 markah]

Answer **all** questions
Jawab **semua** soalan

For
Examiner's
use

1. Diagram 1 shows a cross-section of the human skin.
Rajah 1 menunjukkan keratan rentas kulit manusia

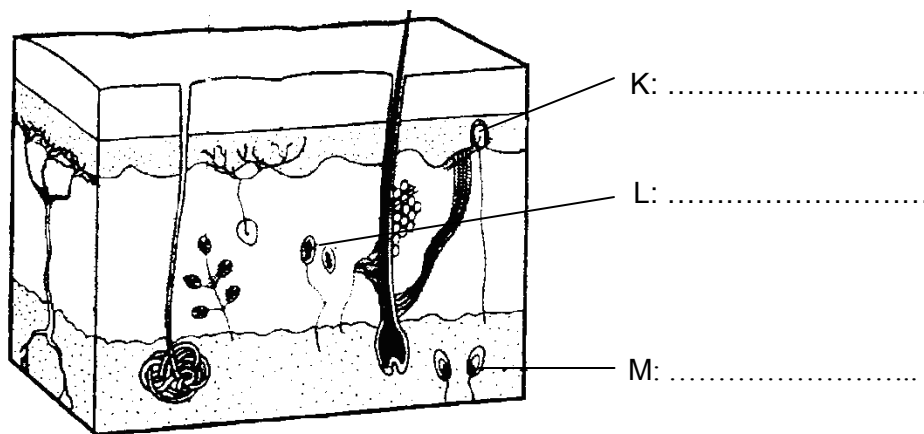


Diagram 1
Rajah 1

- (a) On Diagram 1, label structures K, L dan M using the following words.
Pada rajah 1, labelkan struktur K, L dan M menggunakan perkataan berikut.

Cold receptor <i>Reseptor sejuk</i>	Touch receptor <i>Reseptor sentuhan</i>	Pressure receptor <i>Reseptor tekanan</i>
--	--	--

[3 marks]
[3 markah]

1(a)

- (b) State the type of receptor that helps blind people to read Braille?
Nyatakan jenis reseptor yang membantu orang buta membaca Braille?

[1 mark]
[1 markah]

1(b)

- (c) Which is more sensitive, the fingertips or the soles of the feet ? Give **one** reason.
 Yang manakah lebih sensitif, hujung jari atau tapak kaki? Berikan **satu** sebab.

1(c)

TOTAL

[2 marks]

[2 markah]

2. Diagram 2 shows a plunger placed on the surface of a clogged sink.
 Rajah 2 menunjukkan pelocok diletakkan di permukaan singki yang tersumbat.

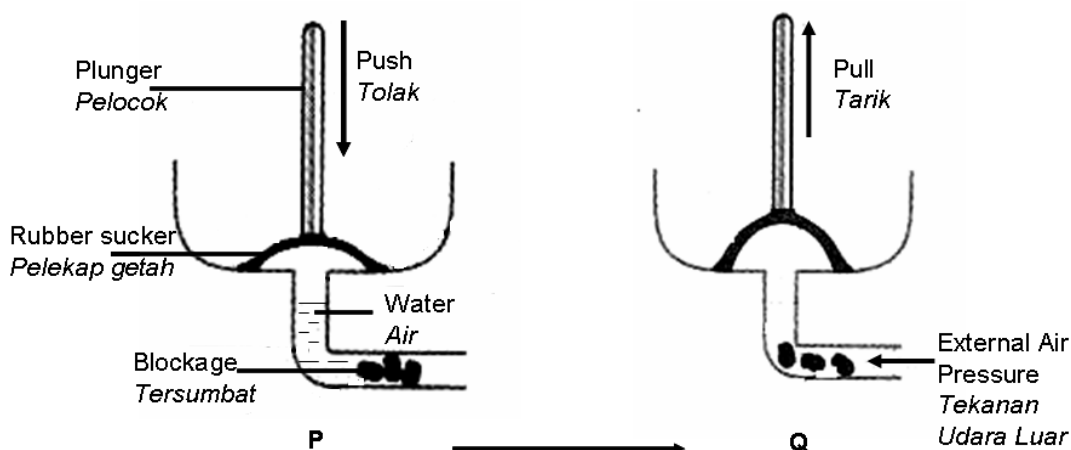


Diagram 2
Rajah 2

- (a) What is the purpose of using the plunger as shown in Diagram 2?
 Apakah tujuan menggunakan pelocok seperti yang ditunjukkan pada Rajah 2?

2(a)

[1 mark]

[1 markah]

- (b) What happens to the air pressure under the rubber sucker when the plunger is pushed downward?
 Apakah yang berlaku kepada tekanan udara di bawah pelekap getah jika pelocok ditolak ke bawah?

2(b)

[1 mark]

[1 markah]

[Lihat sebelah
SULIT

- (c) When the plunger is pulled upward as shown in Q, what happens to
Apabila pelocok ditarik ke atas seperti yang ditunjukkan di Q, apakah yang berlaku kepada

For
Examiner's
use

- (i) the air pressure under the rubber sucker?
Tekanan udara di bawah pelekap getah?

2(c)(i)

[1 mark]
[1 markah]

- (ii) the external air pressure in the pipe?
tekanan udara luar di dalam paip?

2(c)(ii)

[1 mark]
[1 markah]

- (d) State the relationship between the air pressure and the volume of air in a closed container.
Nyatakan hubungan antara tekanan udara dan isipadu udara di dalam suatu bekas yang tertutup?

2(d)

[1 mark]
[1 markah]

- (e) Give one other factor which affects the air pressure in a closed container?
Berikan satu faktor lain yang mempengaruhi tekanan udara di dalam bekas yang tertutup?

2(e)

[1 mark]
[1 markah]

TOTAL

3. Diagram 3 shows the apparatus set-up to study the process of absorption of digested food.

Rajah 3 menunjukkan alat radas untuk mengkaji proses penyerapan hasil pencernaan.

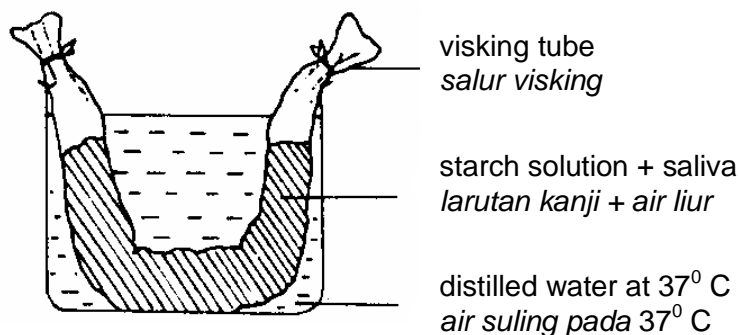


Diagram 3
Rajah 3

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use

- a) Which part of the human digestive system is represented by
Bahagian sistem pencernaan manusia yang manakah diwakili oleh

- i) Visking tube:
Tiub visking:

3(a)(i)

- ii) Distilled water in the beaker
Air suling dalam bikar

3(a)(ii)

[2 marks]

[2 markah]

- b) A few drops of distilled water is removed to test for the presence of starch and glucose. Record the results of the experiment in the table provided below.

Sedikit air suling telah dipindahkan untuk mengkaji kehadiran kanji dan glukosa. Rekodkan keputusan eksperimen di dalam jadual yang disediakan di bawah.

Particular Perkara	Food test Ujian makanan	
	Starch Kanji	Glucose Glukosa
At the beginning of the experiment Pada awal eksperimen	Absent Tiada	Absent Tiada
After 10 minutes Selepas 10 minit		

3(b)

[2 marks]

[2 markah]

[Lihat sebelah

SULIT

- c) Explain what happen to the starch inside the visking tube?
Terangkan apa yang berlaku kepada kanji yang berada dalam tiub visking?

.....
 [1 mark]
 [1 markah]

- d) Why must the visking tube containing starch solution and saliva must be kept in the water bath at 37 °C?
Mengapakah salur visking yang mengandungi larutan kanji dan air liur direndamkan dalam kukus air bersuhu 37°C?

.....
 [1 mark]
 [1 markah]

For
Examiner's
use

3(c)

3(d)

TOTAL

- 4 Diagram 4 shows the human urinary system.
Rajah 4 menunjukkan sistem perkumuhan manusia

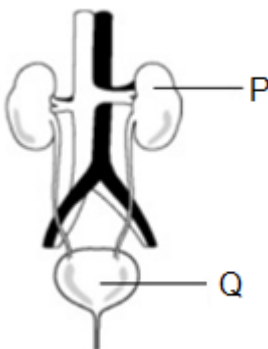


Diagram 4
 Rajah 4

- a) (i) What is the excretory product of P?
Apakah hasil perkumuhan P?

.....
 [1 mark]
 [1 markah]

4(a)(i)

- (ii) What is the function of structure **Q**?
*Apakah fungsi struktur **Q**?*

.....

[1 mark]
[1 markah]

4 (a)(ii)

- b) A kidney failure patient can be treated using dialysis machine that acts as kidney. State the substance that can be filtered (removed) by a dialysis machine.
Seorang pesakit dengan ginjal yang tidak berfungsi boleh dirawat menggunakan mesin dialisis yang bertindak sebagai ginjal. Nyatakan bahan yang boleh di singkirkan melalui mesin dialisis.

.....

[1 mark]
[1 markah]

4(b)

- c) (i) Plants do not have specific excretory organs. They expel their waste products by diffusion through the stomata. Name **two** processes carried out by the plants involving the production of gases.
*Tumbuhan tidak mempunyai organ perkumuhan spesifik. Tumbuhan menyingkirkan bahan kumuh secara resapan melalui stomata. Namakan **dua** proses yang dijalankan oleh tumbuhan yang melibatkan penghasilan gas-gas.*

1.

2.

[2 marks]
[2 markah]

4(c)(i)

- (ii) Name **one** example of excretory product of plant.
*Namakan **satu** contoh hasil perkumuhan tumbuh-tumbuhan.*

.....

[1 mark]
[1 markah]

4(c)(ii)

TOTAL

5. Diagram 5 shows a wooden block being pulled on the surface of a table with a force of Q Newton

Rajah 5 menunjukkan bongkah kayu ditarik di atas permukaan meja dengan daya Q Newton.

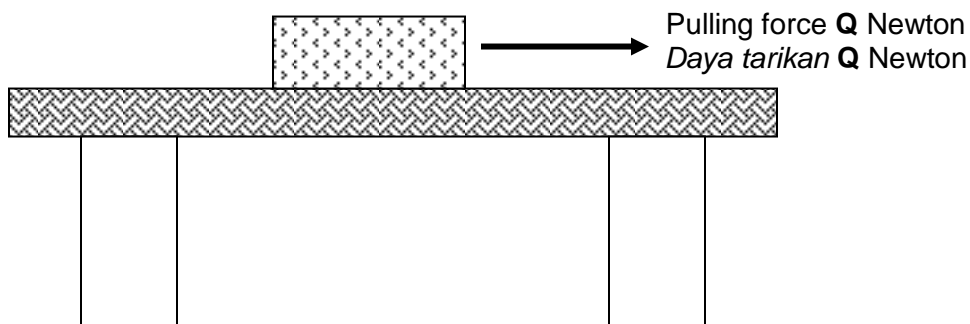


Diagram 5
Rajah 5

*For
Examiner's
use*

- (a) (i) The motion of the wooden block is opposed by a force. Mark the direction of this force in Diagram 5 above.

Pergerakan bongkah kayu ditentang oleh satu daya. Tandakan arah tindakan daya dalam Rajah 5 di atas

[1 mark]
[1 markah]

5 (a)(i)

- (ii) Name the force in (a) (i)
Namakan daya di (a) (i)

.....

[1 mark]
[1 markah]

5 (a)(ii)

- (iii) State **two** importance of the force in (a) (ii) our daily life
*Nyatakan **dua** kepentingan daya di (a)(ii) dalam kehidupan harian*

1.

2.

[2 marks]
[2 markah]

5 (a)(iii)

[Lihat sebelah
SULIT

(b) Given :
Diberi

Pulling force = 60 N
Daya tarikan

Distance traveled by wooden block = 0.5 m
Jarak blok kayu ditarik.

Calculate work done
Kira kerja yang dilakukan

Work done = Force x distance
Kerja dilakukan = Daya x Jarak

[2 marks]
[2 markah]

5 (b)

(c) Wooden blocks with the same weight are added to the block of wood above.
Force needed to pull them are listed as in the Table 5.

Satu bongkah kayu yang sama berat ditambahkan di atas blok kayu tersebut.
Daya yang diperlukan untuk menarik blok-blok tersebut adalah seperti dalam Jadual 5.

Number of block <i>Bilangan bongkah</i>	Pulling force / N <i>Daya tolakan</i>
1	60
2	120
3	180
4	Y

Table 5
Jadual 5

(i) State the relationship between the weight of the blocks and the frictional force.
Nyatakan hubungan antara berat bongkah dengan daya geseran.

.....
.....

[1 mark]
[1 markah]

5 (c)(i)

- (ii) Based on Table 5, predict the force needed to pull **four** wooden blocks

Berdasarkan Jadual 5, ramalkan daya yang diperlukan untuk menarik empat bongkah kayu

[1 mark]
[1 markah]

5 (c)(ii)

TOTAL

6. Table 6 shows the densities of four different liquids J, K, L and M .

Jadual 6 menunjukkan ketumpatan empat cecair yang berlainan J,K,L dan M

Liquid <i>Cecair</i>	Volume (cm ³) <i>Isipadu (cm³)</i>	Mass (g) <i>Jisim (g)</i>	Density (g/cm ³) <i>Ketumpatan (g/cm³)</i>
J	15	15.0	1
K	15	45.0	
L	15	10.5	0.70
M	15	204	13.6

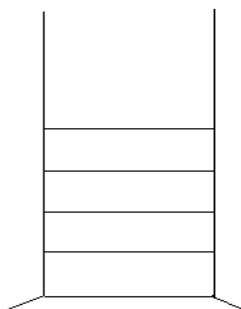
Table 6
Jadual 6

- a) Calculate the density of liquid K.
Kira ketumpatan cecair K.

[3 marks]
[3 markah]

6 (a)

- b) The liquids are then poured into a gas jar and allowed to stand for a while.
Mark the positions of the liquids J, K, L and M in the gas jar below.
*Cecair-cecair tersebut dituangkan ke dalam balang gas dan dibiarkan seketika.
Tandakan kedudukan cecair J, K, L and M dalam balang gas di bawah.*



Gas jar
balang gas

[2 marks]
[2 markah]

6 (b)

- c) The student poured liquid P with density 0.8 g/cm^3 into the gas jar.
Pelajar tersebut telah menuang cecair P dengan ketumpatan 0.8 g/cm^3 ke dalam balang gas itu.

- i. State the location of the liquid P by marking (✓) in the box below.
Nyatakan kedudukan cecair P dengan menandakan (✓) dalam kotak di bawah.

Settled on top of liquid J <i>Berada di atas cecair J</i>	
Settled on top of liquid K <i>Berada di atas cecair K</i>	

[1 mark]
[1 markah]

6 (c)(i)

☐

- ii. Explain your answer in (c) (i) by using the concept of density?
Terangkan jawapan anda dalam (c) (i) dengan menggunakan konsep ketumpatan?

[1 mark]
[1 markah]

6 (c)(ii)

☐

- d) State **one** type of transportation that apply the principle of density.
*Nyatakan **satu** pengangkutan yang menggunakan prinsip ketumpatan.*

[1 mark]
[1 markah]

6 (d)

☐

TOTAL

☐

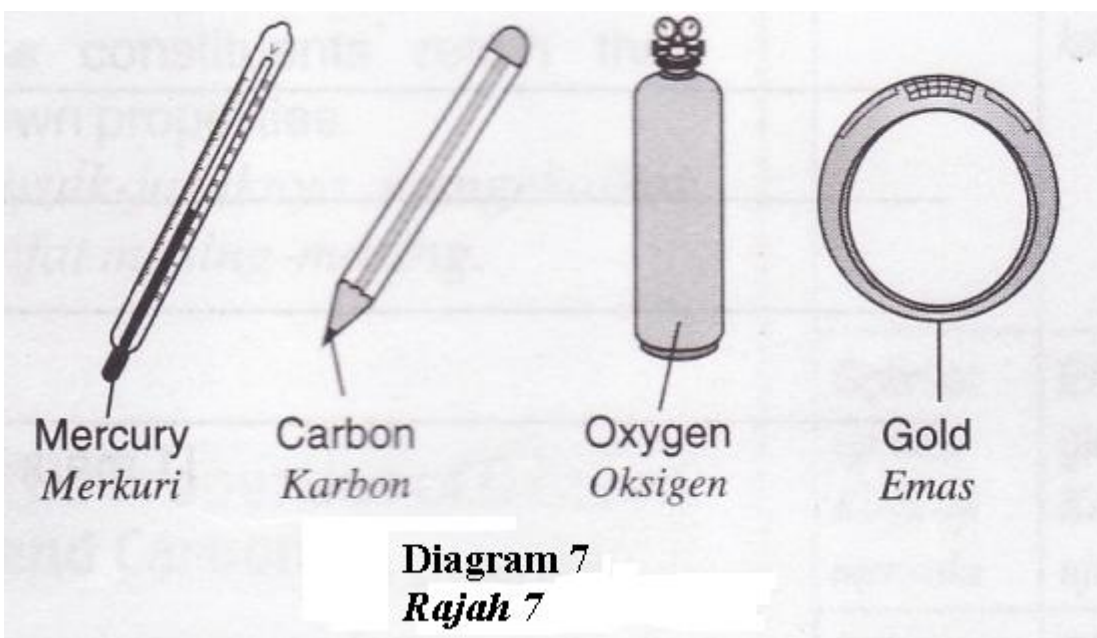
Section B
Bahagian B

[20 marks]
[20 markah]

Answer **all** questions.
Jawab **semua** soalan

For
Examiner's
use

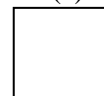
7. Diagram 7 shows four objects that **contain** or are **made up** of different substances.
*Rajah 7 menunjukkan empat objek yang **mengandungi** atau **diperbuat** daripada bahan-bahan berbeza.*



- a) What is the state of each substance at room temperature?
Apakah keadaan setiap bahan pada suhu bilik?

- i. Mercury
Merkuri = _____
- ii. Carbon
Karbon = _____
- iii. Oxygen
Oksigen = _____
- iv. Gold

7(a)



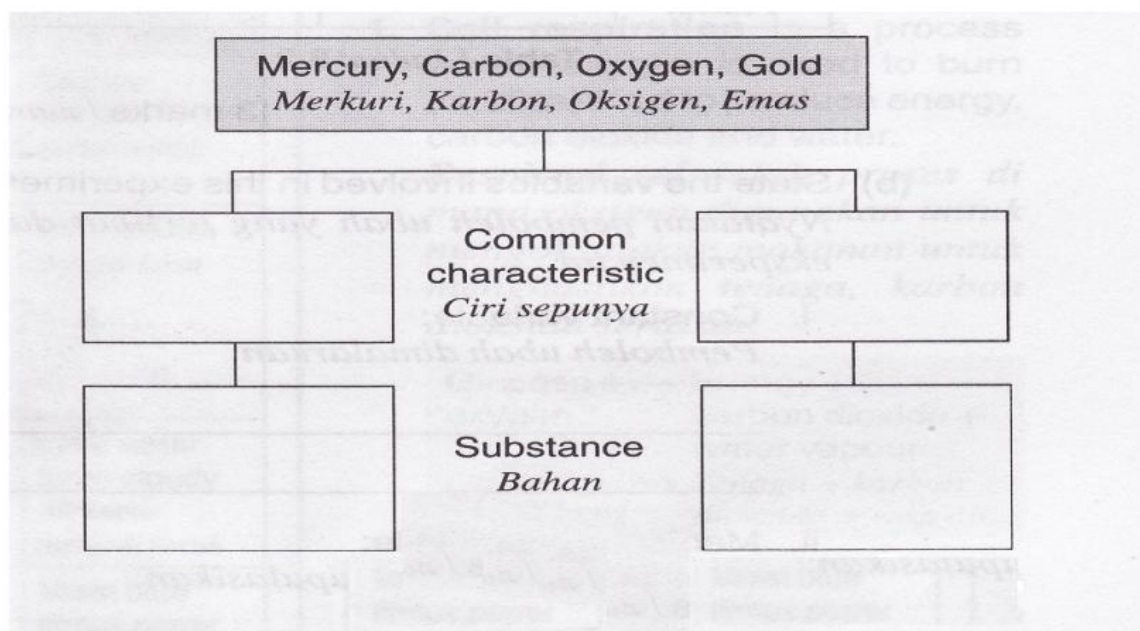
Emas = _____

[4 marks]
[4 markah]

For
Examiner's
use

- b) Classify the substances into two groups based on their common characteristics that is the state of matter at room temperature.

Kelaskan bahan-bahan itu kepada dua kumpulan berdasarkan ciri-ciri seponya ia itu keadaan jirim pada suhu bilik.



[4 marks]
[4 markah]

7(b)

- c) State **two** characteristics of copper that makes it suitable to be used as wires.
Nyatakan **dua** ciri kuprum yang menjadikannya sesuai digunakan untuk membuat wayar.

7(c)

i.

ii.

[2 marks]
[2 markah]

TOTAL

8. Diagram 8.1 shows an electrical circuit.
Rajah 8.1 menunjukkan suatu litar elektrik.

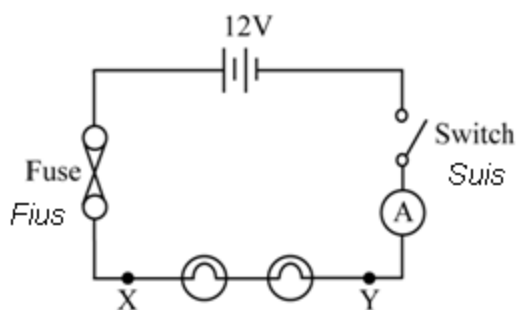


Diagram 8.1
Rajah 8.1

- (a) State **one** inference about bulb when the switch is turned on?
*Nyatakan **satu** inferens tentang mentol apabila suis dihidupkan?*

For
 Examiner's
 use

8 (a)

[1 mark]
 [1 markah]

Diagram 8.2 shows the experimental set-up to study the relationship between voltage and current.

Rajah 8.2 menunjukkan persediaan eksperimen untuk mengkaji hubungan kait di antara voltan dan arus.

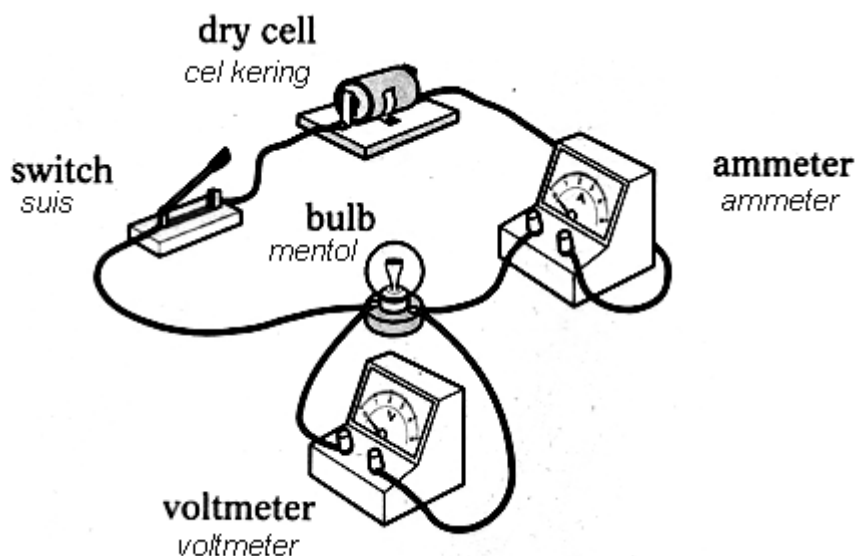


Diagram 8.2
Rajah 8.2

[Lihat sebelah
 SULIT

The steps of the experiment are as follows:

Langkah-langkah ujikaji tersebut adalah seperti berikut:

Step 1: The switch is turned on.

Langkah 1: Dipasangkan suisnya.

Step 2: The ammeter and voltmeter readings are recorded.

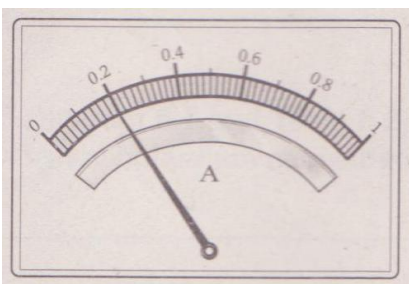
Langkah 2: Bacaan ammeter dan voltmeter dicatatkan.

Step 3: Step 1 and Step 2 are repeated by using two, three, four and five dry cells alternately.

Langkah 3: Langkah 1 dan 2 diulang dengan menggunakan dua, tiga, empat dan lima sel kering berselang seli.

(b) Record the ammeter readings in the spaces provided.

Catatkan bacaan ammeter di dalam ruang yang disediakan.

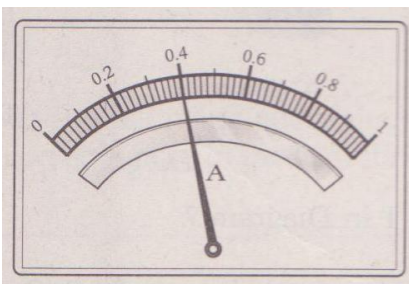


The voltmeter reading

Bacaan voltmeter = 1.5 V

Ammeter reading /

Bacaan ammeter = 0.2 A

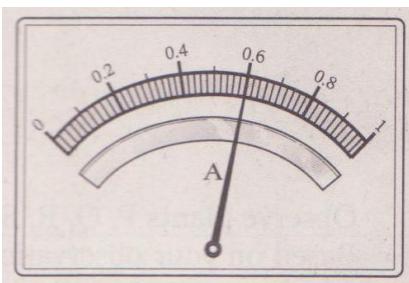


The voltmeter reading

Bacaan voltmeter = 3.0 V

Ammeter reading

Bacaan ammeter = _____ A

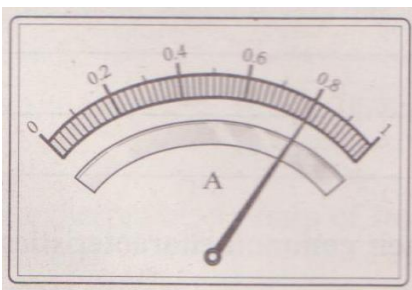


The voltmeter reading

Bacaan voltmeter = 4.5 V

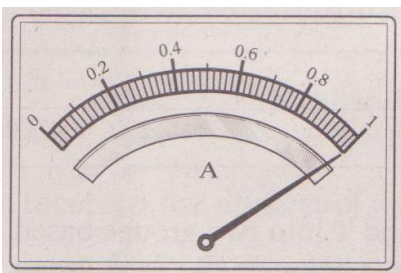
Ammeter reading

bacaan ammeter = _____ A



The voltmeter reading
Bacaan voltmeter = 6.0 V

Ammeter reading
Bacaan ammeter = _____ A



The voltmeter reading
Bacaan voltmeter = 7.5 V

Ammeter reading
Bacaan ammeter = _____ A

Complete Table 8.3 by recording the ammeter readings on the respective voltmeter readings.

Lengkapkan Jadual 8.3 dengan mencatatkan bacaan ammeter yang sepadan dengan bacaan voltmeter.

Number of dry cells <i>Bilangan cel kering</i>	1	2	3	4	5
Voltmeter reading (V) <i>Bacaan voltmeter (V)</i>	1.5	3.0	4.5	6.0	7.5
Ammeter reading (A) <i>Bacaan ammeter (A)</i>	0.2				

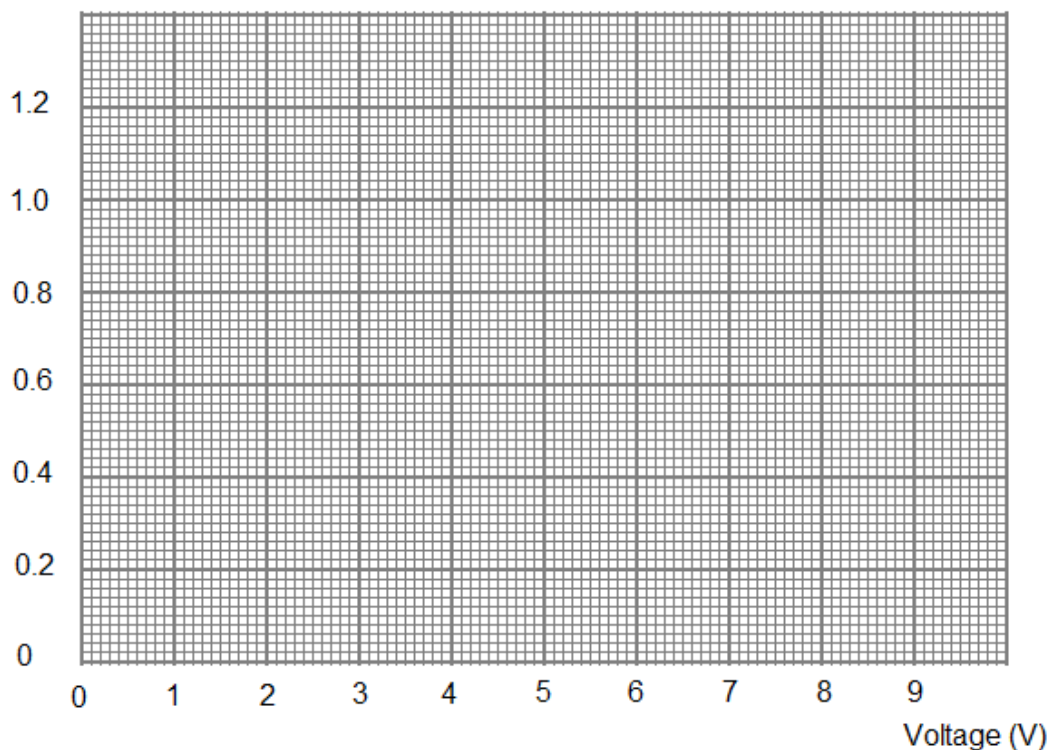
Table 8.3
Jadual 8.3

[2 mark]
 [2 markah]

8 (b)

- (c) Using Table 8.3, draw a graph of current against voltage.
Menggunakan Jadual 8.3, lukiskan graf arus melawan voltan.

Current (A)



[2 marks]
 [2 markah]

8 (c)

- (d) State the relationship between the voltage and the current.
Nyatakan hubungan antara voltan dan arus.

.....

.....

[1 mark]
 [1 markah]

8 (d)

- (e) State the variables involved in this experiment.
Nyatakan pemboleh ubah yang terlibat dalam eksperimen ini.

Manipulated variable <i>Pemboleh ubah dimanipulasikan</i>	
Responding variable <i>Pemboleh ubah bergerak balas</i>	
Constant variable <i>Pemboleh ubah dimalarkan</i>	Number of dry cells/ Thickness of wire <i>Bilangan sel kering/ ketebalan wayar</i>

[2 marks]
 [2 markah]

8 (e)

[Lihat sebelah
SULIT

- (f) Based on the graph in (c), predict the ammeter reading if the voltmeter reading is 9.0 V.

Berdasarkan graf di (c), ramalkan bacaan ammeter jika bacaan voltmeter ialah 9.0 V.

.....

[1 mark]
[1 markah]

8 (f)

- (g) Define operationally "current".

Definisikan secara operasi "arus".

.....

[1 mark]
[1 markah]

8 (g)

TOTAL

END OF QUESTION PAPER

KERTAS SOALAN TAMAT

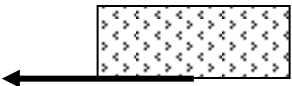
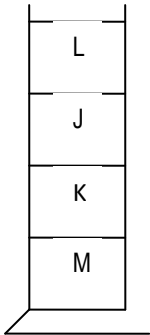
NOMBOR SOALAN	JAWAPAN	NOMBOR SOALAN	JAWAPAN
1	B	21	B
2	A	22	D
3	C	23	A
4	D	24	C
5	B	25	B
6	D	26	D
7	C	27	A
8	D	28	C
9	D	29	A
10	D	30	C
11	B	31	B
12	D	32	C
13	A	33	B
14	C	34	A
15	C	35	D
16	D	36	B
17	A	37	B
18	B	38	A
19	C	39	A
20	A	40	B



MARKING SCHEME

EXCEL 2 PMR 2010

Question	Suggested Answer	Marks											
1	<p>(a) K : Touch receptor L : Cold receptor M : Pressure receptor</p> <p>(b) Touch receptor</p> <p>(c) Finger tip. There are more receptors at the finger tip // The epidermis of the finger tip is thinner</p>	<p>1 m 1 m 1 m</p> <p>1 m</p> <p>2 m</p> <p>TOTAL= 6 m</p>											
2	<p>(a) to clear a clogged pipe (b) air pressure increased (c) (i) air pressure decrease/ reduce (ii) becomes higher (d) Air pressure increases when volume of air decreases (e) Temperature</p>	<p>1 m 1 m 1 m 1 m 1 m 1 m</p> <p>TOTAL= 6 m</p>											
3	<p>(a) (i) small intestine (ii) blood</p> <p>(b)</p> <table border="1"> <thead> <tr> <th rowspan="2">Particular / Perkara</th><th colspan="2">Food test / <i>Ujian makanan</i></th></tr> <tr> <th>Starch / <i>Kanji</i></th><th>Glucose / <i>Glukosa</i></th></tr> </thead> <tbody> <tr> <td>At the beginning of the experiment <i>Awal eksperimen</i></td><td>Absent <i>Tiada</i></td><td>Absent <i>Tiada</i></td></tr> <tr> <td>After 10 minutes <i>Selepas 10 minit</i></td><td>Absent <i>Tiada</i></td><td>Present <i>Ada</i></td></tr> </tbody> </table> <p>(c) Starch is digested into glucose (d) Enzyme work best at body temperature.</p>	Particular / Perkara	Food test / <i>Ujian makanan</i>		Starch / <i>Kanji</i>	Glucose / <i>Glukosa</i>	At the beginning of the experiment <i>Awal eksperimen</i>	Absent <i>Tiada</i>	Absent <i>Tiada</i>	After 10 minutes <i>Selepas 10 minit</i>	Absent <i>Tiada</i>	Present <i>Ada</i>	<p>1 m 1 m</p> <p>2 m</p> <p>1 m 1 m</p> <p>TOTAL= 6 m</p>
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4	<p>(a) (i) Urine (ii) Store urine</p> <p>(b) Urea dan excess mineral salt</p> <p>(c) (i) Photosynthesis and respiration (ii) Oil/ Opium/ Resin/ Tannin</p> <p>*Accept any suitable answer</p>	<p>1 m 1 m 1 m 2 m 1 m</p> <p>TOTAL= 6 m</p>
5	<p>a (i) </p> <p>(ii) Frictional Force</p> <p>(iii) Enable us to walk without slipping// to write// to play music// to stop a car and any related answer</p> <p>b Work done = Force x distance = 60 N x 0.5 m - 1 mark = 30 Nm / J - 1 mark</p> <p>c i) The heavier the weight of the blocks, the larger the frictional force. ii) 240 N</p>	<p>1 m 1 m 2 m 2m 1 m 1 m</p> <p>TOTAL= 8 m</p>
	<p>3.0 a) Density = Mass / volume - 1 mark = 45 g/ 15 cm³ - 1 mark = 3.0 g/cm³ - 1 mark</p> <div style="text-align: center;">  </div> <p>(2 correct arrangement – 1 mark. All corrects – 2 marks)</p>	<p>3 m 2 m</p>

	<div>i.<table><tr><td>Settled on top of liquid J <i>Tersebar di atas lapisan cecair J</i></td><td>√</td></tr></table></div> <div>ii. Liquid P is less dense than liquid J / denser than L.</div> <div>d) Raft / Ship/ Boat /Canoe/ Submarine/ Ferry/ Hovercraft/ Hot air balloon</div> <div>TOTAL= 8 m</div>	Settled on top of liquid J <i>Tersebar di atas lapisan cecair J</i>	√	<div>1 m</div> <div>1 m</div> <div>1 m</div>
Settled on top of liquid J <i>Tersebar di atas lapisan cecair J</i>	√			
7	<div>a) i: Liquid ii: Solid iii. Gas iv. Solid</div> <div>b) Group 1: Metal - (Mercury, Gold) Group 2: Non-Metal - (Carbon, oxygen)// Group 1: Solid (Gold, Carbon) Group 2: Non-Solid (Mercury, Oxygen// Group 1: Liquid (Mercury) Group 2: Non-Liquid (Gold, Carbon, Oxygen) (Accept any suitable answer)</div> <div>c) Ductile// Able to conduct electricity// high melting point (Accept any suitable answer)</div> <div>TOTAL= 10 m</div>	<div>1 m</div> <div>1 m</div> <div>1 m</div> <div>1 m</div> <div>4 m</div> <div>2 m</div>		
8	<div>(a) The bulbs light up because the circuit is complete// The bulbs light up when there is flow of current</div> <div>(b) (i) 0.4, 0.6, 0.8, 1.0</div> <div>(c) Type of graph -1 mark Transfer of point - 1 markah</div> <div>(d) The voltage increase, the current increase</div> <div>(e) Manipulated variable : voltage (voltmeter reading) Responding variable : current(ammeter reading)</div> <div>(f) 1.2 A – 1.4 A</div> <div>(g) Reading of the ammeter <i>Bacaan ammeter</i></div> <div>TOTAL= 10 m</div>	<div>1 m</div> <div>2 m</div> <div>2 m</div> <div>1 m</div> <div>2 m</div> <div>1 m</div> <div>1 m</div>		

