MAJLIS PENGETUA SEKOLAH MALAYSIA (MPSM)
NEGERI KEDAH DARUL AMAN

PROGRAM PENINGKATAN AKADEMIK
PENILAIAN MENENGAH RENDAH 2011

SCIENCE

KERTAS 1

Satu jam

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU

1. Kertas soalan ini adalah dalam dwibahasa.
2. Soalan dalam Bahasa Inggeris mendahului soalan yang sepadan dalam Bahasa Melayu.
3. Calon dikehendaki membaca maklumat di halaman belakang kertas soalan ini.

Kertas soalan ini mengandungi **37** halaman bercetak

[Lihat halaman sebelah
SULIT

1 The following information shows the procedure of an experiment to investigate how the length of a simple pendulum affects its swings.

Maklumat berikut menunjukkan prosedur satu eksperimen untuk mengkaji bagaimana panjang bandul ringkas mempengaruhi ayunannya.

K - Recording the data collected

Merekodkan data terkumpul

L - Making conclusions

Membuat kesimpulan

M - Making observation

Membuat pemerhatian

N - Analysing and interpreting data

Menganalisis dan mentafsirkan data

Which of the following is arranged in the correct sequence?

Antara berikut, yang manakah disusun mengikut urutan yang betul?

A L, M, N, K

B M, K, N, L

C N, K, L, M

D K, L, N, M

2 Diagram 1 shows a plant cell.

Rajah 1 menunjukkan satu sel tumbuhan.

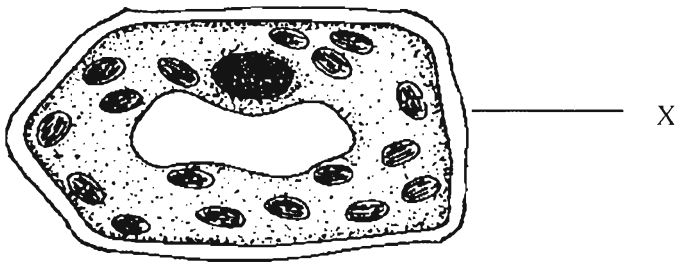


Diagram 1

Rajah 1

What is the function of structure X?

Apakah fungsi struktur X?

A Supports and gives the cell a regular shape.

Menyokong dan memberi bentuk yang tetap kepada sel.

B Controls the movement of substances into or out of the cell.

Mengawal pergerakan masuk atau keluar bahan dalam sel.

C Controls all activities of the cell.

Mengawal semua aktiviti dalam sel.

D Stores salt solution and sugar solution.

Menyimpan larutan garam dan larutan gula.

3 A stone has a volume of 10 cm^3 and a mass of 35 g. Calculate its density.

Seketul batu mempunyai isipadu 10 cm^3 *dan berjisim* 35 g. *Hitung ketumpatannya.*

A 0.29 g/cm^3

B 2.9 g/cm^3

C 3.5 g/cm^3

D 35 g/cm^3

4 Diagram 2 shows a classification of matter.

Rajah 2 menunjukkan pengelasan jirim.

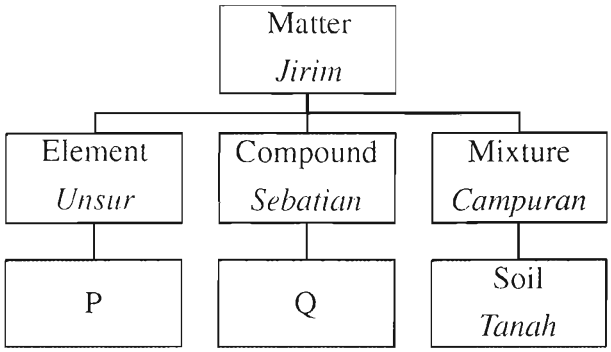


Diagram 2

Rajah 2

Which of the following represents P and Q?

Manakah antara berikut mewakili P *dan* Q*?*

	P	Q
A	Carbon *Karbon*	Water *Air*
B	Salt *Garam*	Ammonia *Ammonia*
C	Oxygen *Oksigen*	Gold *Emas*
D	Sulphur *Sulfur*	Air *Udara*

5 Diagram 3 shows the components of air.

Rajah 3 menunjukkan komponen dalam udara.

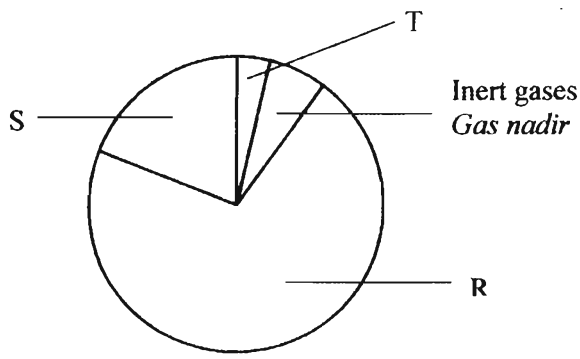


Diagram 3

Rajah 3

What are gases R, S and T?

Apakah gas R, S dan T?

	R	S	T
A	Oxygen *Oksigen*	Nitrogen *Nitrogen*	Carbon dioxide *Karbon dioksida*
B	Hydrogen *Hidrogen*	Oxygen *Oksigen*	Nitrogen *Nitrogen*
C	Carbon dioxide *Karbon dioksida*	Hydrogen *Hidrogen*	Oxygen *Oksigen*
D	Nitrogen *Nitrogen*	Oxygen *Oksigen*	Carbon dioxide *Karbon dioksida*

6 Diagram 4 shows two identical candles are lighted.

Rajah 4 menunjukkan dua batang lilin yang serupa dinyalakan.

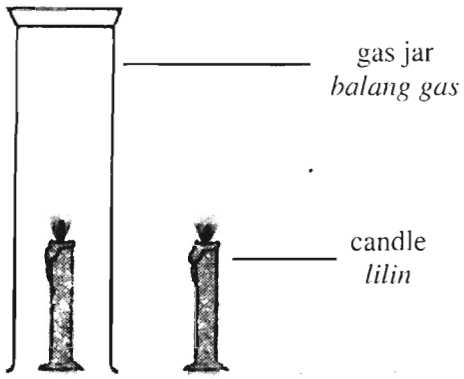


Diagram 4

Rajah 4

Why does the candle in the gas jar extinguish first?

Mengapakah lilin di dalam balang gas padam dahulu?

A It contains more carbon dioxide.

Ia mengandungi lebih karbon dioksida.

B Oxygen has been used up.

Oksigen telah habis digunakan.

C It contains less water vapour.

Ia mengandungi kurang wap air.

D The temperature is higher.

Suhunya lebih tinggi.

7 Which of the following source of energy is non-renewable?

Antara berikut, sumber tenaga yang manakah tidak boleh diperbaharui?

A Coal

Arang batu

B Waves

Ombak

C Biomass

Biomas

D Wind

Angin

8 Diagram 5 shows an experiment to study how heat flows through solids.

Rajah 5 menunjukkan satu eksperimen untuk mengkaji bagaimana haba mengalir melalui pepejal.

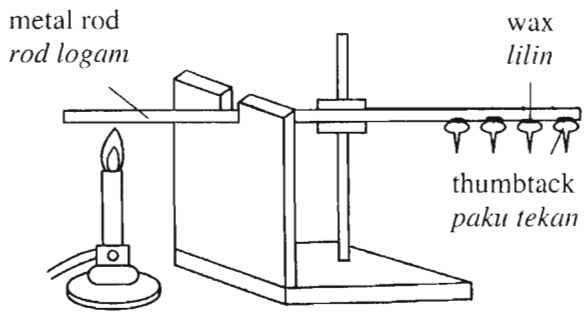


Diagram 5
Rajah 5

Heat flows in a solid by

Haba mengalir di dalam pepejal melalui

A contraction

pengecutan

B conduction

konduksi

C convection

perolakan

D radiation

sinaran

9 W, X, Y and Z are steps in a fire alarm.

W, X, Y dan Z adalah langkah-langkah dalam penggera kebakaran.

W - Bimetallic strip bends

Jalur dwilogam membengkok

X - The fire alarm bell rings

Loceng penggera kebakaran berbunyi

Y - The temperature of bimetallic strip rises

Suhu jalur dwilogam meningkat

Z - Bimetallic strip completes the circuit

Jalur dwilogam melengkapkan litar

Arrange the steps in the correct sequence.

Susunkan langkah-langkah tersebut mengikut urutan yang betul.

A Y, W, Z, X

B Y, Z, W, X

C W, Y, X, Z

D W, Z, X, Y

10 Diagram 6 shows a cross section of the human eye.

Rajah 6 menunjukkan keratan rentas mata manusia.

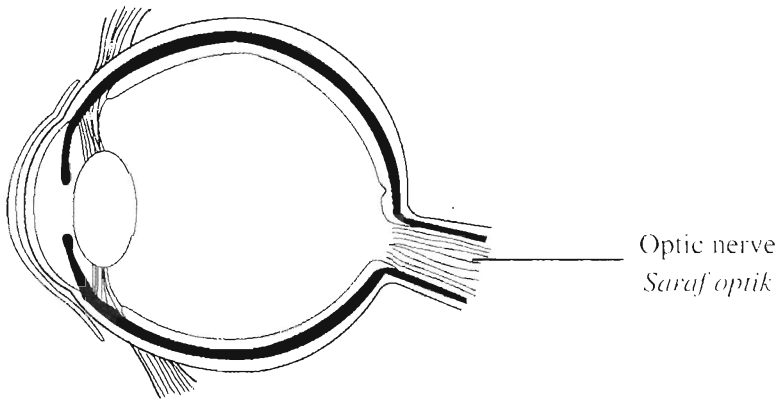


Diagram 6

Rajah 6

What is the function of the optic nerve?

Apakah fungsi saraf optik?

A Contracts or relaxes to change the thickness of the lens

Menegang atau mengendur untuk mengubah ketebalan kanta

B Carries nerve impulses from the retina to the brain

Membawa impuls saraf dari retina ke otak

C Refracts and focuses light to form an image on the retina

Membias dan memfokus cahaya untuk menghasilkan imej pada retina

D Controls the amount of light entering the eye

Mengawal jumlah cahaya yang memasuki mata

11 Old people generally cannot hear as well as young people, this is because

Orang tua biasanya kurang pendengaran berbanding dengan orang muda, ini adalah kerana

A the pinna cannot collect sound efficiently
cuping telinga tidak dapat mengumpul bunyi dengan berkesan

B the ear drums become less elastic
gegendang telinga menjadi kurang kenyal

C the cochlea cannot convert vibration into impulse
koklea tidak dapat menukar getaran kepada impuls

D the ear canal produces too much earwax
salur telinga mengeluarkan banyak tahi telinga

12 The following statements show responses of a plant towards stimuli.

Pernyataan berikut menunjukkan gerak balas tumbuhan terhadap ransangan.

- Shows positive phototropism
  Menunjukkan fototropisme positif
- Shows negative geotropism
  Menunjukkan geotropisme negatif

Which part of the plant is described?

Bahagian manakah pada tumbuhan yang diterangkan?

A Roots
Akar

B Shoots
Pucuk

C Tendrils
Sulur paut

D Fruits
Buah

13 Which of the following person requires foods rich in energy?

Antara berikut, siapakah yang memerlukan makanan yang kaya dengan tenaga?

A Fauzi,14 years old, a student.

Fauzi, umur 14 tahun, seorang pelajar.

B Rodzi, 40 years old, a teacher.

Rodzi, umur 40 tahun, seorang guru.

C Jamal, 36 years old, a labourer.

Jamal, umur 36 tahun, seorang buruh.

D Hafizah, 26 years old, a clerk.

Hafizah, umur 26 tahun, seorang kerani.

14 Diagram 7 shows the human digestive system.

Rajah 7 menunjukkan sistem pencernaan manusia.

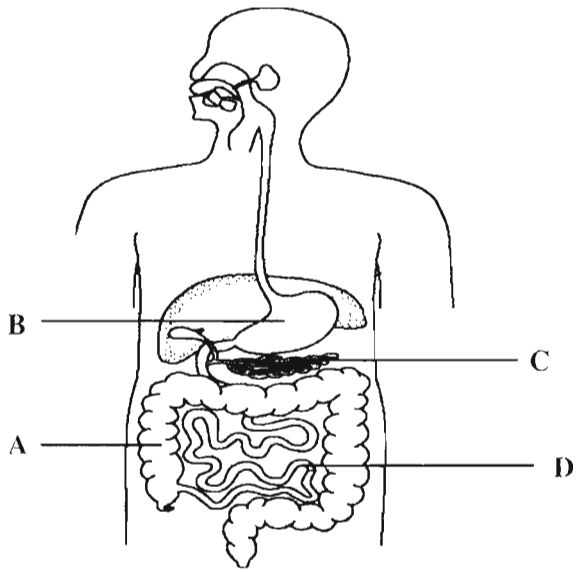


Diagram 7

Rajah 7

Which of the part labelled **A**, **B**, **C** or **D**, absorbs water?

Bahagian manakah berlabel **A**, **B**, **C** *atau* **D** *yang menyerap air?*

15 The animals listed below can be classified into the same group.

Haiwan yang tersenarai di bawah boleh dikelaskan dalam kumpulan yang sama.

- Tapir

  Tenuk

- Tiger

  Harimau

- Cat

  Kucing

- Monkey

  Monyet

What is the common physical characteristic which can be used?

Apakah ciri-ciri fizikal sepunya yang boleh digunakan?

A Bodies are covered with hair or fur

Badan diliputi dengan rambut atau bulu

B Giving birth to young

Melahirkan anak

C Warm blooded

Berdarah panas

D Carry out internal fertilisation

Menjalankan persenyawaan dalam

16 Diagram 8 shows the interaction between two organisms.

Rajah 8 menunjukkan interaksi antara dua organisma.

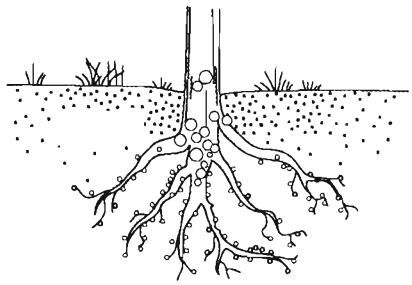


Diagram 8

Rajah 8

What is the type of interaction and the example of organisms similar to Diagram 8?

Apakah jenis interaksi dan contoh organisma yang sama seperti Rajah 8?

	Type of interaction *Jenis interaksi*	Example of organisms *Contoh organisma*
A	Commensalism *Komensalisme*	Shark and remora fish *Jerung dan ikan remora*
B	Competition *Persaingan*	Paddy and *lallang* *Padi dan lalang*
C	Mutualism *Mutualisme*	Sea anemone and hermit crab *Buran dan umang-umang*
D	Parasitism *Parasitisme*	*Rafflesia* and tree *Raflesia dan pokok*

17 Diagram 9 shows an experiment to study the composition of water.

Rajah 9 menunjukkan satu eksperimen untuk mengkaji komposisi air.

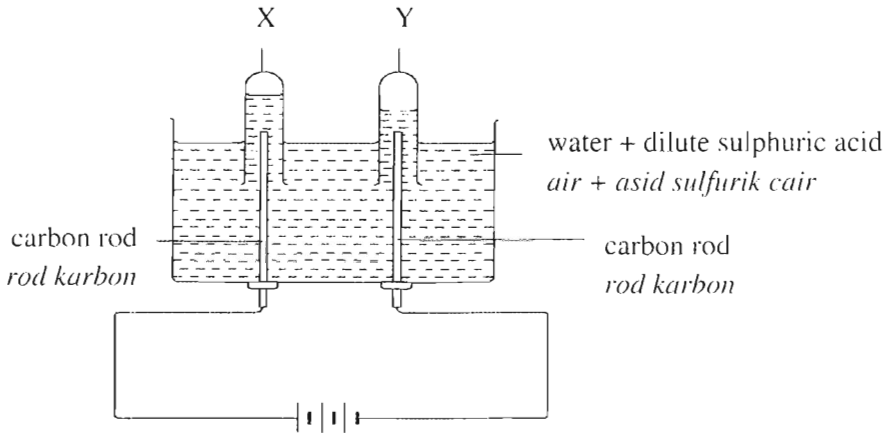


Diagram 9

Rajah 9

What tests can be carried out to determine the identity of gas X and gas Y?

Apakah ujian yang boleh dijalankan untuk mengenalpasti gas X *dan gas* Y*?*

	Test for gas X *Ujian untuk gas* X	Test for gas Y *Ujian untuk gas* Y
A	Use a burning wooden splint *Menggunakan kayu uji bernyala*	Use lime water *Menggunakan air kapur*
B	Use lime water *Menggunakan air kapur*	Use universal indicator *Menggunakan penunjuk universal*
C	Use universal indicator *Menggunakan penunjuk universal*	Use a glowing wooden splint *Menggunakan kayu uji berbara*
D	Use a glowing wooden splint *Menggunakan kayu uji berbara*	Use a burning wooden splint *Menggunakan kayu uji bernyala*

18 Which of the following will dissolve the fastest?

Antara berikut yang manakah paling cepat larut?

	Form of sodium chloride *Bentuk natrium klorida*	Volume of water (cm^3) *Isipadu air* (cm^3)	Temperature (^oC) *Suhu* (^oC)
A	A piece of 10 g crystal *Sekeping hablur* 10 g	100	40
B	10 g of fine powder 10 g *serbuk halus*	200	65
C	10 g of coarse powder 10 g *serbuk kasar*	200	70
D	10 g of fine powder 10 g *serbuk halus*	200	75

19 Diagram 10 shows a drinking straw with four holes, P, Q, R and S placed in a beaker of water.
Rajah 10 menunjukkan satu penyedut minuman dengan empat lubang P, Q, R *dan* S *di dalam sebuah bikar yang berisi air.*

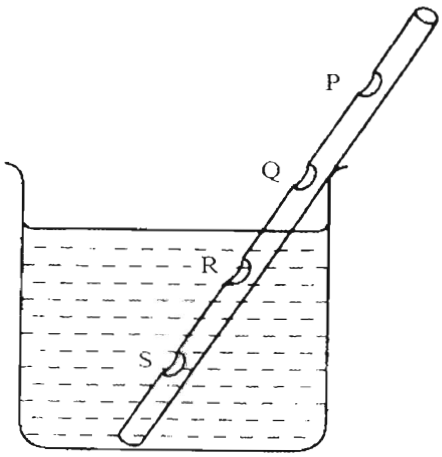


Diagram 10

Rajah 10

Which holes will prevent the water from being sucked up?
Lubang yang manakah tidak membenarkan air disedut ke atas?

A P and Q only
P *dan* Q *sahaja*

B Q and R only
Q *dan* R *sahaja*

C P and S only
P *dan* S *sahaja*

D R and S only
R *dan* S *sahaja*

20 Diagram 11 shows an object being pushed to the right.

Rajah 11 *menunjukkan sebuah objek ditolak ke sebelah kanan.*

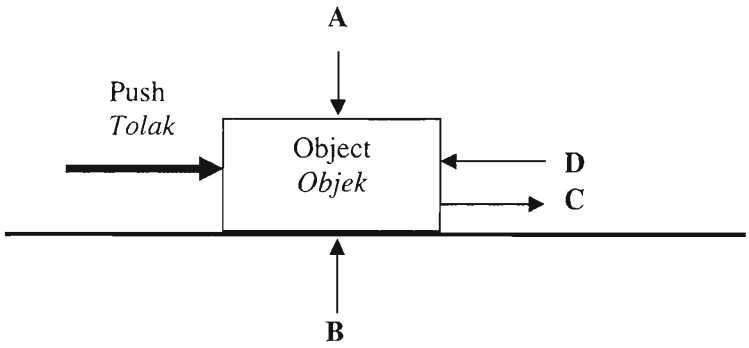


Diagram 11

Rajah 11

Which direction represents the frictional force?

Arah yang manakah mewakili daya geseran?

21 Diagram 12 shows a man pushing a wooden box weighing 50 kg towards a wardrobe in 10 seconds.
Rajah 12 *menunjukkan seorang lelaki sedang menolak sebuah kotak kayu yang beratnya* 50 kg *ke arah almari dalam masa* 10 *saat.*

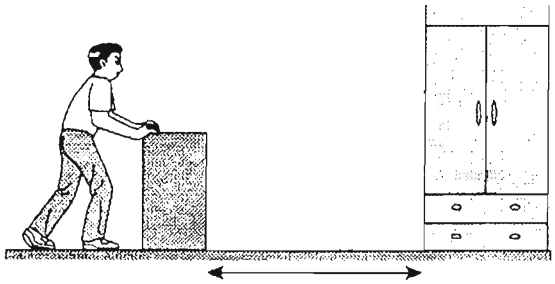


Diagram 12

Rajah 12

Calculate the power.
Hitung kuasa.

A 100 W

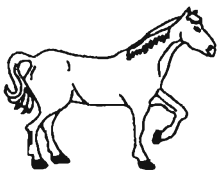
B 150 W

C 350 W

D 400 W

22 Which of the following organism is correctly matched with its support system?

Antara berikut, organisma yang manakah dipadankan dengan betul dengan sistem sokongannya?

	Organism *Organisma*	Support system *Sistem sokongan*
A		Exoskeleton *Rangka luar*
B		Hydrostatic skeleton *Rangka hidrostatik*
C		Exoskeleton *Rangka luar*
D		Endoskeleton *Rangka dalam*

23 Diagram 13 shows a plant using structure P for additional support.

Rajah 13 *menunjukkan sejenis tumbuhan menggunakan struktur* P *sebagai sokongan tambahan.*

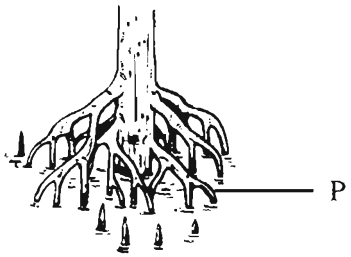


Diagram 13

Rajah 13

What is structure P?

Apakah struktur P*?*

A Stilt roots

Akar jangkang

B Air sac

Pundi udara

C Thorn

Duri

D Tendrils

Sulur paut

24 Diagram 14 shows a giraffe.

Rajah 14 menunjukkan seekor zirafah.

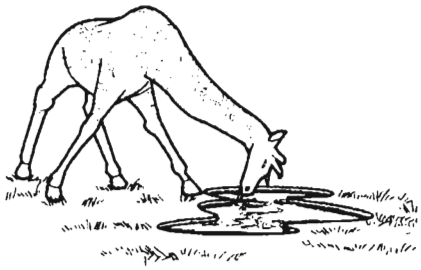


Diagram 14

Rajah 14

The giraffe spreads its leg while drinking water to

Zirafah tersebut mengangkangkan kakinya semasa minum air untuk

A increase its base area

menambahkan luas permukaan tapaknya

B increase its body weight

meningkatkan berat badannya

C increase water intake

meningkatkan pengambilan air

D increase its centre of gravity

menambahkan pusat gravitinya

25 Diagram 15 shows a paper cutter.

Rajah 15 *menunjukkan sebuah alat pemotong kertas.*

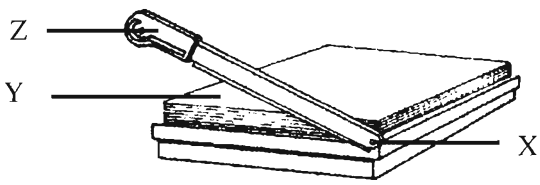


Diagram 15

Rajah 15

Which of the following represents X, Y and Z?

Antara berikut, yang manakah mewakili X, Y *dan* Z*?*

	X	Y	Z
A	Load *Beban*	Effort *Daya*	Fulcrum *Fulkrum*
B	Effort *Daya*	Load *Beban*	Fulcrum *Fulkrum*
C	Fulcrum *Fulkrum*	Effort *Daya*	Load *Beban*
D	Fulcrum *Fulkrum*	Load *Beban*	Effort *Daya*

26 Diagram 16 shows a spanner being used to remove a nut.

Rajah 16 *menunjukkan sebuah spanar digunakan untuk mengeluarkan sebiji nat.*

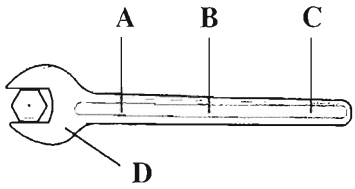


Diagram 16

Rajah 16

At which position, labelled **A**, **B**, **C** or **D**, the least effort is applied?

Pada kedudukan manakah, **A**, **B**, **C** *atau* **D** *paling kurang daya diperlukan?*

27 Which of the following process takes place during inhalation?
Antara berikut, proses yang manakah berlaku semasa menarik nafas?

I The rib moves upwards and outwards
Tulang rusuk bergerak ke atas dan ke luar

II The diaphragm curves up
Diafragma melengkung ke atas

III The volume of the thoracic cavity increases
Isipadu rongga toraks bertambah

IV The air pressure in the thoracic cavity decreases
Tekanan udara di dalam rongga toraks berkurang

A I and II
I *dan* II

B I and III
I *dan* III

C I, III and IV
I, III *dan* IV

D I, II, III and IV
I, II, III *dan* IV

28 Diagram 17 shows a cross section of the root of a dicotyledon plant.

Rajah 17 menunjukkan keratan rentas akar tumbuhan dikotiledon.

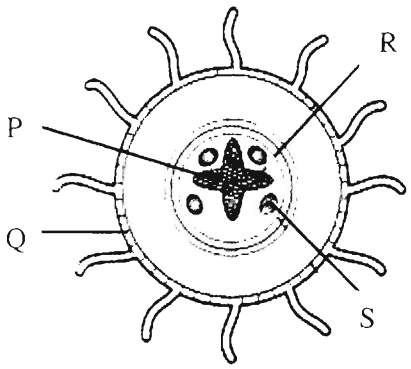


Diagram 17
Rajah 17

Which of the following parts are correctly labelled?

Antara berikut, bahagian manakah dilabelkan dengan betul?

	Xylem *Xilem*	Phloem *Floem*
A	P	R
B	P	S
C	Q	R
D	Q	S

29 Diagram 18 shows the human excretory organs.

Rajah 18 *menunjukkan organ perkumuhan manusia.*

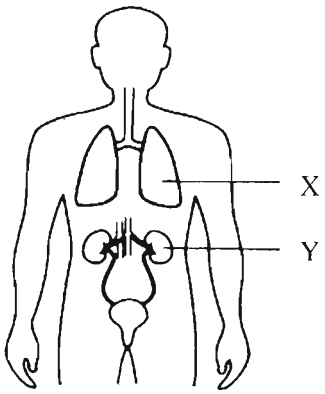


Diagram 18
Rajah 18

What are the products excreted by organs X and Y?

Apakah bahan-bahan yang disingkirkan oleh organ X *dan* Y*?*

	X	Y
A	Mineral salts and urea *Garam mineral dan urea*	Mineral salts and water *Garam mineral dan air*
B	Mineral salts and water *Garam mineral dan air*	Mineral salts and water *Garam mineral dan air*
C	Mineral salts, water and urea *Garam mineral, air dan urea*	Carbon dioxide and water vapour *Karbon dioksida dan wap air*
D	Carbon dioxide and water vapour *Karbon dioksida dan wap air*	Mineral salts, water and urea *Garam mineral, air dan urea*

30 Which of the following is the correct pathway of urea in the human urinary system?

Antara berikut, manakah laluan yang betul bagi urea dalam sistem urinari manusia?

A Kidney → Urinary bladder → Urethra → Ureter

Ginjal → Pundi Kencing → Uretra → *Ureter*

B Ureter → Kidney → Urethra→ Urinary bladder

Ureter → Ginjal → Uretra → Pundi kencing

C Kidney → Ureter → Urinary bladder → Urethra

Ginjal → Ureter → Pundi kencing → Uretra

D Kidney → Urethra → Urinary bladder → Ureter

Ginjal → Uretra → Pundi kencing → Ureter

31 Which of the following statement is true about the differences between sexual and asexual reproduction?

Antara berikut, pernyataan yang manakah benar tentang perbezaan antara pembiakan seks dan aseks?

	Sexual reproduction *Pembiakan seks*	Asexual reproduction *Pembiakan aseks*
A	Takes place in animals only *Berlaku dalam haiwan sahaja*	Takes place in plants only *Berlaku dalam tumbuhan sahaja*
B	Offspring does not show genetic variation *Individu baru tidak menunjukkan variasi genetik*	Offspring shows genetic variation *Individu baru menunjukkan variasi genetik*
C	Involves fusion of male and female gametes *Melibatkan percantuman gamet jantan dan gamet betina*	Does not involve gametes *Tidak melibatkan gamet*
D	Involves only one parent *Melibatkan satu induk sahaja*	Involves two parents *Melibatkan dua induk*

32 Diagram 19 shows pollination in plants.

Rajah 19 *menunjukkan pendebungaan dalam tumbuhan.*

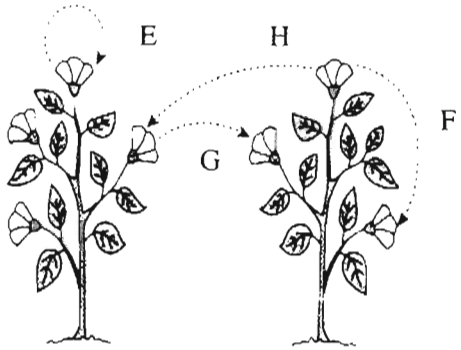


Diagram 19

Rajah 19

Which of the following shows self-pollination?

Antara berikut, yang manakah menunjukkan pendebungaan sendiri?

A G and H
G *dan* H

B F and H
F *dan* H

C E and G
E *dan* G

D E and F
E *dan* F

33 Anaemia is a nutrient deficiency disease caused by less intake of food such as
Anemia adalah penyakit kekurangan zat makanan yang disebabkan oleh kekurangan pengambilan makanan seperti

A bread and potatoes
roti dan kentang

B milk and eggs
susu dan telur

C meat and liver
daging dan hati

D vegetables and fruits
sayuran dan buahan

34 Diagram 20 shows the chemical changes that occur to iron powder through heating.

Rajah 20 *menunjukkan perubahan kimia yang berlaku kepada serbuk besi melalui pemanasan.*

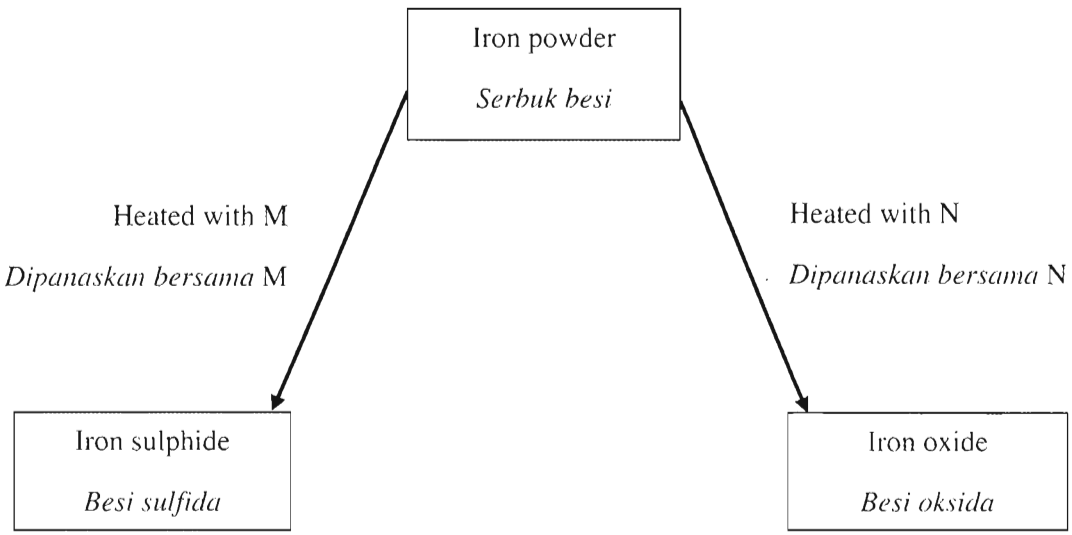


Diagram 20

Rajah 20

Which of the following represents M and N?

Antara berikut, yang manakah mewakili M *dan* N*?*

	M	N
A	Sulphide *Sulfida*	Carbonate *Karbonat*
B	Sulphur *Sulfur*	Oxygen *Oksigen*
C	Potassium manganate(VII) *Kalium manganat*(VII)	Sulphur *Sulfur*
D	Potassium manganate(VII) *Kalium manganat*(VII)	Oxygen *Oksigen*

35 Diagram 21 shows an electric circuit.

Rajah 21 *menunjukkan satu litar elektrik.*

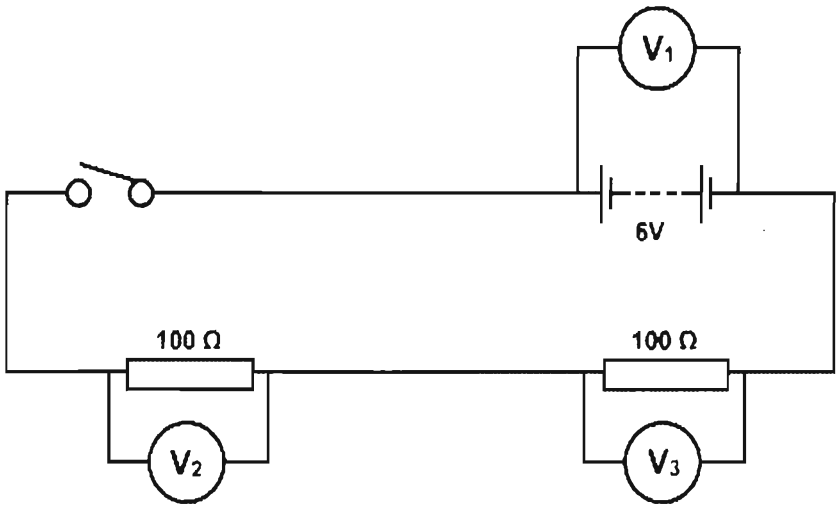


Diagram 21

Rajah 21

What are the readings of voltmeter V_1, V_2 and V_3 when the switch is on?

Apakah bacaan voltmeter V_1, V_2 *dan* V_3 *apabila suis dihidupkan?*

	V_1	V_2	V_3
A	6 V	12 V	12 V
B	3 V	3 V	12 V
C	6 V	3 V	3 V
D	6 V	6 V	6 V

36 Diagram 22 shows five compasses placed around a bar magnet to determine the direction of its magnetic field.

Rajah 22 menunjukkan lima buah kompas diletakkan di sekeliling sebuah magnet bar untuk menentukan arah medan magnetnya.

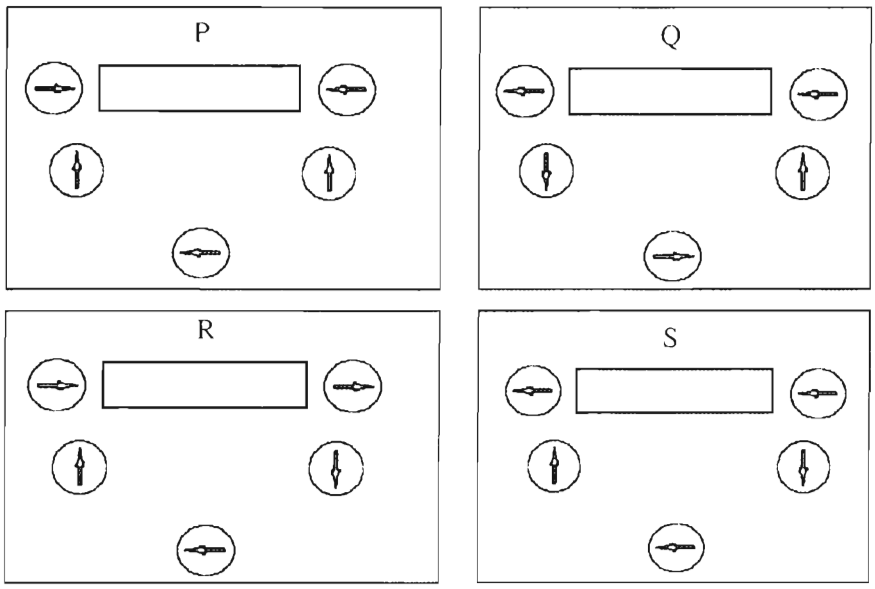


Diagram 22

Rajah 22

Which of the following shows the correct directions of the compasses needle?

Antara berikut, yang manakah menunjukkan arah jarum kompas dengan betul?

A P only

P *sahaja*

B R and S

R *dan* S

C P and S

P *dan* S

D Q and R

Q *dan* R

37 Diagram 23 shows an air conditioner which is labelled 240V, 2.5 kW.

Rajah 23 *menunjukkan sebuah pendingin udara yang berlabel* 240V, 2.5 kW.

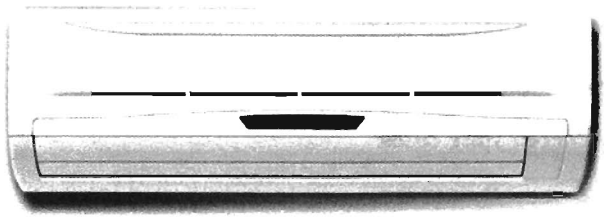


Diagram 23

Rajah 23

What is the rating of a fuse that is suitable for the air conditioner?

Apakah nilai fius yang sesuai bagi pendingin udara itu?

A 5 A

B 10 A

C 12 A

D 20 A

38 Which of the following are the electrical safety measures needed to be taken to prevent electrical accidents?

Antara berikut, langkah-langkah keselamatan yang manakah perlu diambil untuk mengelakkan kemalangan disebabkan elektrik?

I Check wires for damaged insulation
Periksa wayar-wayar bagi penebat yang rosak

II Do not touch any switch with wet hands
Jangan sentuh suis dengan tangan yang basah

III Check for any loose connections
Periksa sebarang penyambungan yang longgar

A I and III
I *dan* III

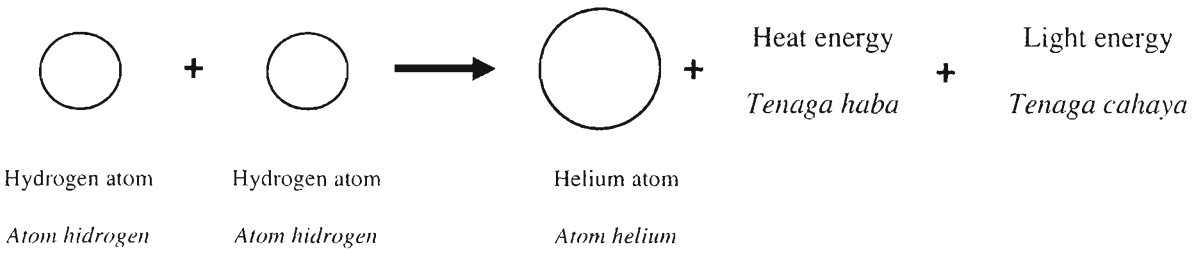
B I and II
I *dan* II

C II and III
II *dan* III

D I, II and III
I, II *dan* III

39 Diagram 24 shows nuclear reaction that occurs in the Sun. Two hydrogen atoms fuse together to form one helium atom.

Rajah 24 *menunjukkan tindak balas nuklear yang berlaku dalam Matahari. Dua atom hidrogen berpadu untuk membentuk satu atom helium.*



Hydrogen atom
Atom hidrogen

Hydrogen atom
Atom hidrogen

Helium atom
Atom helium

Diagram 24

Rajah 24

Where does the reaction occur?

Di manakah tindak balas itu berlaku?

A Corona
Korona

B Core
Teras

C Chromosphere
Kromosfera

D Photosphere
Fotosfera

40 Which of the following can return to the Earth after being launched into space?

Antara berikut, yang manakah dapat kembali semula ke Bumi selepas dilancarkan ke angkasa lepas?

A Space shuttles

Kapal angkasa ulang-alik

B Space stations

Stesen angkasa lepas

C Space probes

Prob angkasa lepas

D Satellites

Satelit

END OF QUESTION PAPER

KERTAS SOALAN TAMAT

SULIT
55/2
SCIENCE
Kertas 2
Ogos
1½ jam

NO. KAD PENGENALAN | | | | | | | - | | | - | | | |

ANGKA GILIRAN | | | | | | | | | | | | | |

MAJLIS PENGETUA SEKOLAH-SEKOLAH MALAYSIA (MPSM)
NEGERI KEDAH DARUL AMAN

PROGRAM PENINGKATAN AKADEMIK
PENILAIAN MENENGAH RENDAH 2011

SCIENCE
Kertas 2
Satu jam tiga puluh minit

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU

1. *Tuliskan* **nombor kad pengenalan** *dan* **angka giliran** *anda pada ruang yang disediakan.*
2. *Kertas soalan ini adalah dalam dwibahasa.*
3. *Soalan dalam bahasa Inggeris mendahului soalan yang sepadan dalam bahasa Melayu.*
4. *Calon dibenarkan menjawab keseluruhan atau sebahagian soalan sama ada dalam bahasa Inggeris atau bahasa Melayu.*
5. *Calon dikehendaki membaca maklumat di halaman belakang kertas soalan ini.*

Kod Pemeriksa			
Bahagian	Soalan	Markah Penuh	Markah Diperolehi
A	1	6	
	2	6	
	3	6	
	4	6	
	5	8	
	6	8	
B	7	8	
	8	12	
Jumlah		60	

Kertas soalan ini mengandungi **29** halaman bercetak

Untuk Kegunaan Pemeriksa

Section A

Bahagian A

[40 marks]

[40 *markah*]

Answer **all** questions

Jawab ***semua*** *soalan*

1 Diagram 1.1 shows the structure of a human kidney.

Rajah 1.1 *menunjukkan struktur satu ginjal dalam badan manusia.*

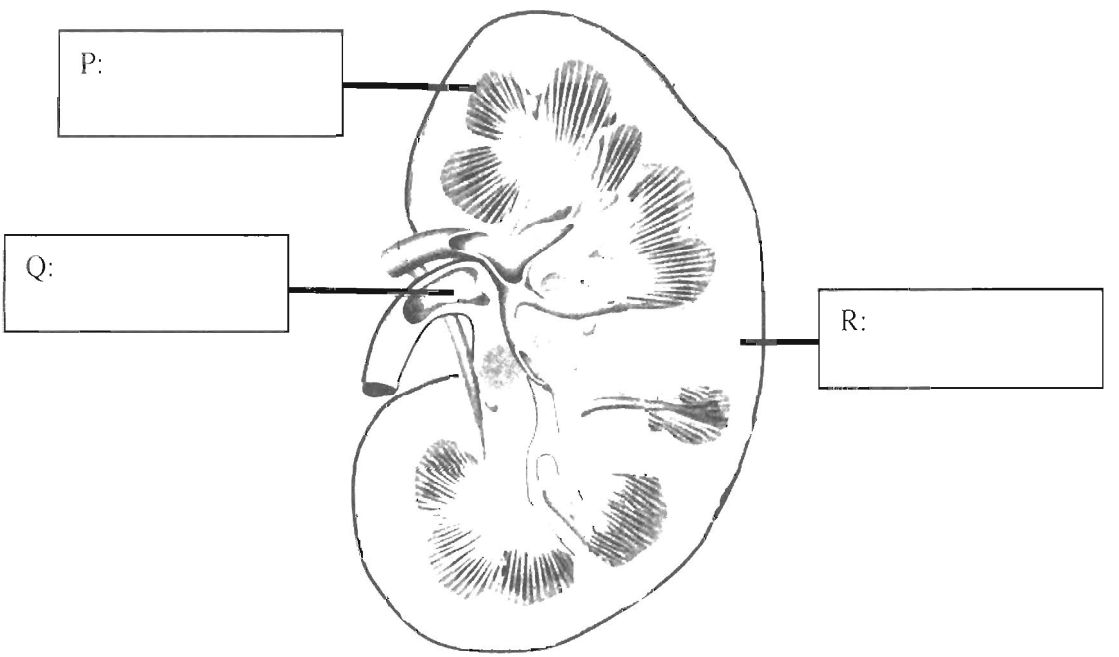


Diagram 1.1

Rajah 1.1

(a) On Diagram 1.1, label structure P, Q and R using the following words.

Pada Rajah 1.1, *label struktur* P ,Q *dan* R *dengan perkataan berikut.*

1(a)

3

Pelvis *Pelvis*	Cortex *Korteks*	Urethra *Uretra*	Medulla *Medula*

[3 marks / 3 *markah*]

Untuk Kegunaan Pemeriksa

(b) Diagram 1.2 shows a urinary system in the human body.

Rajah 1.2 menunjukkan sistem urinari dalam badan manusia.

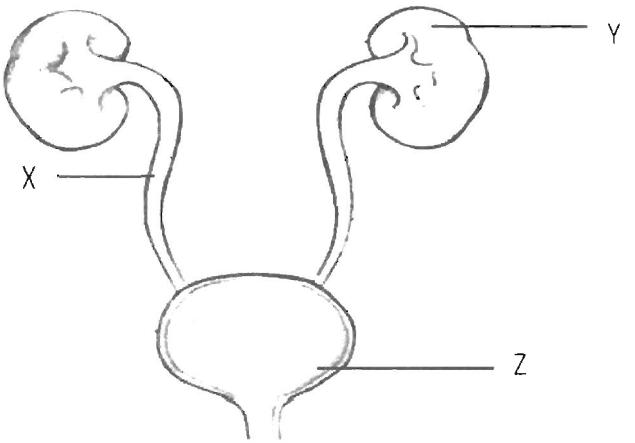


Diagram 1.2

Rajah 1.2

Based on Diagram 1.2, draw lines to match each organ with its function.

Berdasarkan Rajah 1.2, lukis garisan untuk memadankan setiap organ dengan fungsinya.

Organ *Organ*	**Function** *Fungsi*
X	To filter blood. *Untuk menapis darah.*
Y	To remove urine from the body. *Untuk menyingkir air kencing dari badan.*
Z	Place where urine is stored temporarily. *Tempat air kencing disimpan sementara*
	To carry urine to the urinary bladder. *Untuk mengangkut air kencing ke pundi kencing*

[3 marks / 3 *markah*]

1(b)

3

Total A1

6

Untuk Kegunaan Pemeriksa

2 Diagram 2.1 shows the structure of the Sun.

Rajah 2.1 *menunjukkan struktur Matahari.*

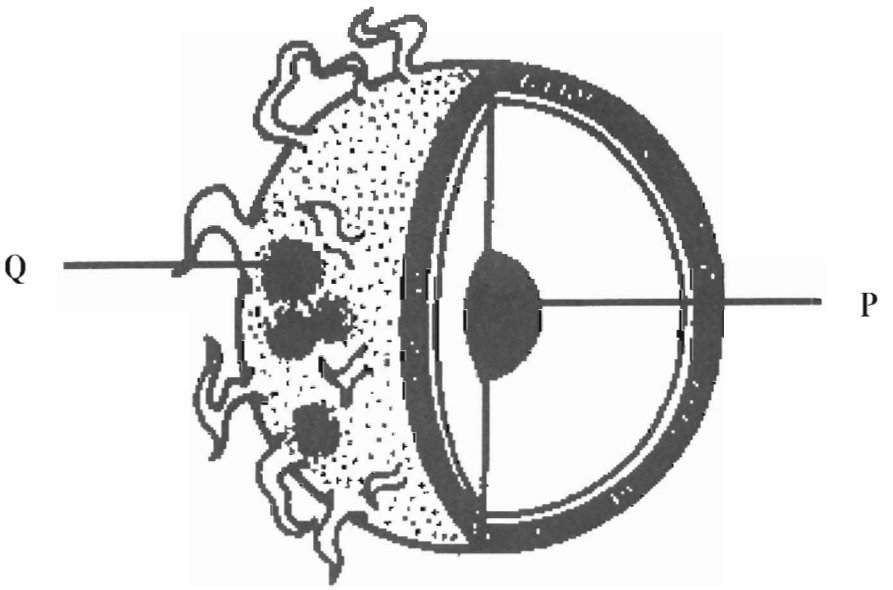


Diagram 2.1

Rajah 2.1

(a) In P, a process to generate heat and light energy occurs.

Name the process.

Dalam P, satu proses yang menjana tenaga haba dan tenaga cahaya berlaku.

Namakan proses tersebut.

2(a)

1

[1 mark / 1 *markah*]

(b) (i) Q is one of the phenomena on the surface of the Sun.

What is Q?

Q merupakan salah satu fenomena di atas permukaan Matahari.

Apakah Q*?*

2(b)(i)

1

[1 mark / 1 *markah*]

Untuk Kegunaan Pemeriksa

(ii) Why does Q look dark on the surface of the Sun?

Mengapakah Q kelihatan gelap di permukaan Matahari ?

_____

_____

[1 mark / 1 *markah*]

2(b)(ii)

1

(c) Diagram 2.2 shows the formation and death of stars .

Rajah 2.2 menunjukkan pembentukan dan kematian bintang.

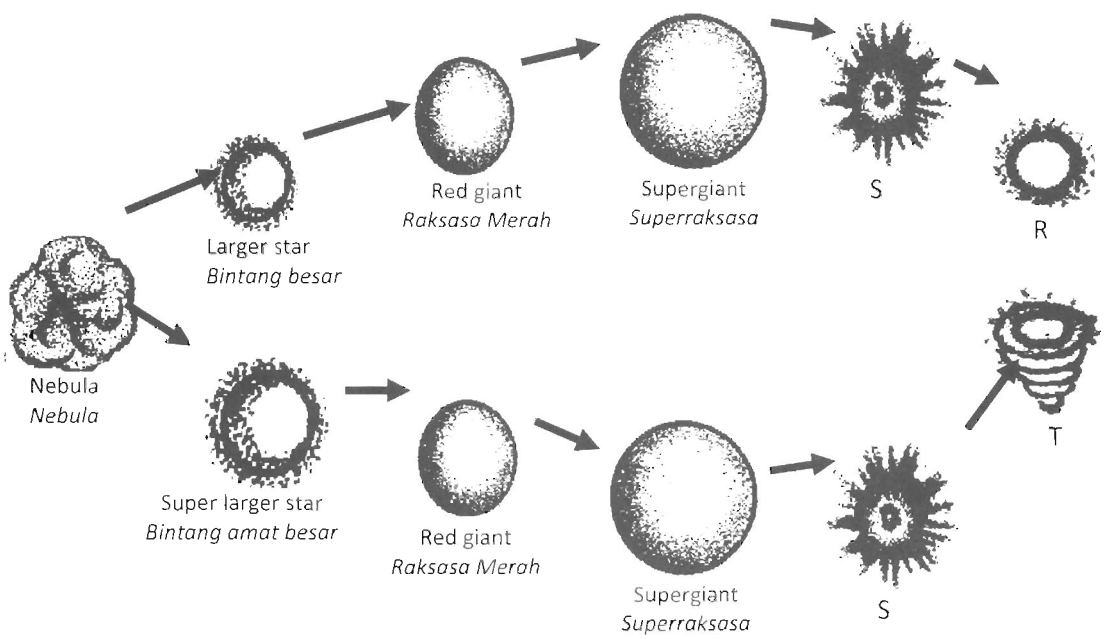


Diagram 2.2

Rajah 2.2

(i) A big explosion will occur at S. What is S?

Satu letupan akan berlaku di S. Apakah S?

_____

[1 mark / 1 *markah*]

2(c)(i)

1

Untuk Kegunaan Pemeriksa

(ii) What might happen to the core of a dying star?

Apakah yang mungkin berlaku kepada teras bintang yang sedang mati?

2(c)(ii)

1

[1 mark / 1 *markah*]

(iii) T is one of the phenomena resulting from the explosion in S.

State the characteristic of T.

T adalah satu fenomena *yang terhasil daripada letupan yang berlaku di* S.

Nyatakan ciri bagi T.

2(c)(iii)

1

[1 mark / 1 *markah*]

Total A2

6

Untuk Kegunaan Pemeriksa

3 (a) Diagram 3.1 shows an experiment to investigate the rate of movement of particles matter. Table 3.2 shows the results of the experiment.

Rajah 3.1 menunjukkan satu eksperimen untuk mengkaji kadar pergerakan zarah-zarah dalam jirim. Jadual 3.2 menunjukkan keputusan eksperimen tersebut.

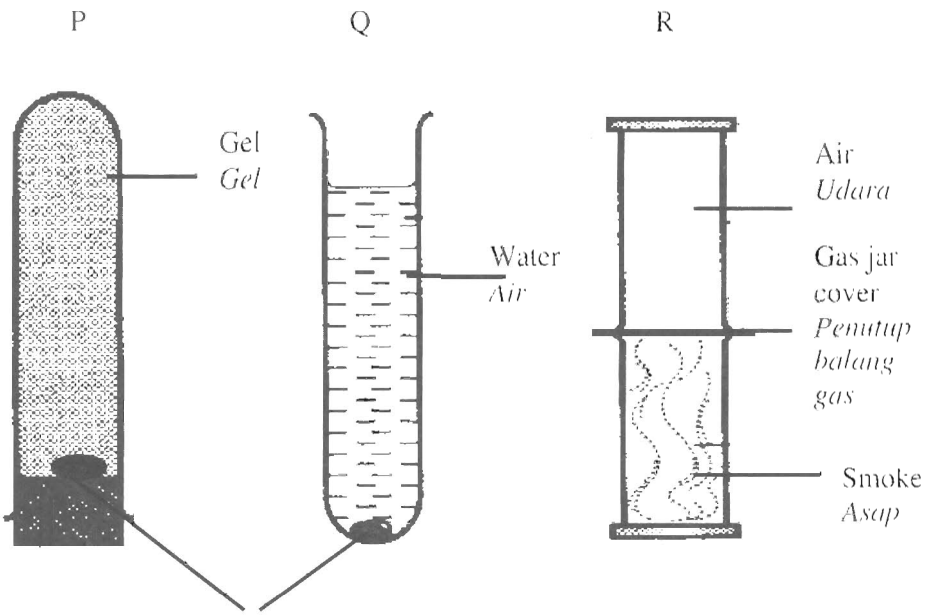


Diagram 3.1
Rajah 3.1

Container *Bekas*	Observation *Pemerhatian*
P	After four days, the entire P turned blue. *Selepas empat hari, keseluruhan P bertukar menjadi biru.*
Q	After forty minutes, the entire Q turned blue. *Selepas empat puluh minit, keseluruhan Q bertukar menjadi biru.*
R	Five seconds after the gas jar cover is pulled out, the entire R is filled with smoke. *Lima saat selepas penutup balang gas ditarik keluar, keseluruhan R dipenuhi dengan asap.*

Table 3.2
Jadual 3.2

Untuk Kegunaan Pemeriksa

3(a)(i)

1

(i) Name the process that happened in containers P, Q and R.

Namakan proses yang berlaku di dalam P, Q *dan* R.

_____

[1 mark / 1 *markah*]

(ii) Why is the process happen in gel is slower than the process in water and smoke?

Mengapakah proses dalam gel berlaku lebih perlahan berbanding dengan proses dalam air dan asap?

3(a)(ii)

1

_____

_____

[1 mark / 1 *markah*]

(b) (i) Based on the result in Table 3.2, among gel, water and air, which is the easiest to be compressed ?

3(b)(i)

1

Berdasarkan keputusan di Jadual 3.2, *antara gel, air dan udara manakah yang paling mudah dimampatkan?*

_____

[1 mark / 1 *markah*]

(ii) Give a reason for the answer in **3** (b) (i).

Berikan sebab bagi jawapan dalam **3** (b) (i).

3(b)(ii)

1

_____

_____

[1 mark / 1 *markah*]

Untuk Kegunaan Pemeriksa

(c) Diagram 3.3 shows a hot air balloon floating in the air.

Rajah 3.3 menunjukkan belon udara panas terapung di udara.

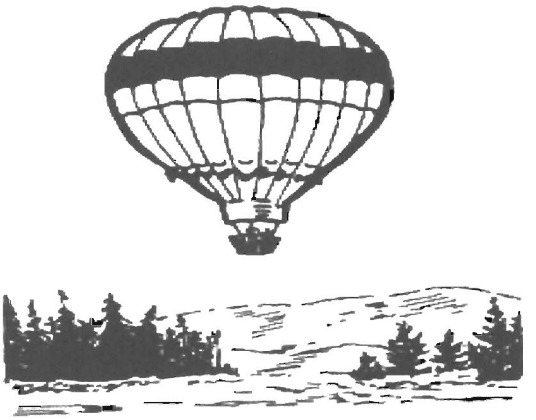


Diagram 3.3

Rajah 3.3

(i) State the movement of air particles inside the balloon.

Nyatakan pergerakan zarah-zarah di dalam belon.

3(c)(i)

1

_____

[1 mark / 1 *markah*]

(ii) State **one** factor that influence the movement of particles in a substance.

Nyatakan **satu** *faktor yang mempengaruhi pergerakan zarah-zarah dalam satu bahan.*

3(c)(ii)

1

_____

_____

[1 mark / 1 *markah*]

Total A3

6

Untuk Kegunaan Pemeriksa

4 (a) Diagram 4.1 shows a method used to separate a mixture of water and cooking oil.
Rajah 4.1 menunjukkan satu kaedah yang digunakan untuk mengasingkan campuran air dan minyak masak.

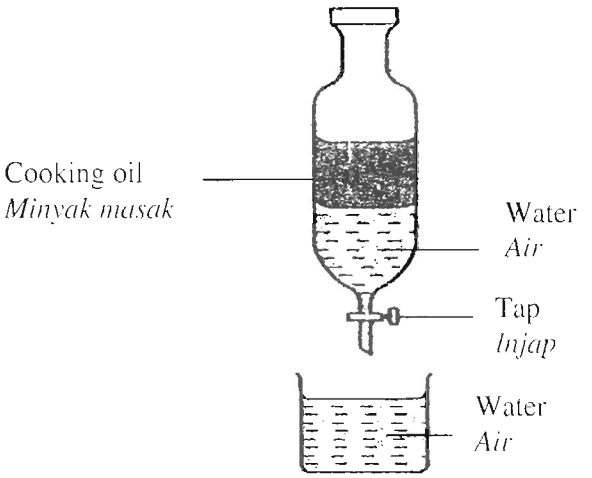


Diagram 4.1
Rajah 4.1

(i) Name the separation method that is used.
Namakan kaedah pengasingan digunakan.

4(a)(i)
[ ]
1

[1 mark / 1 *markah*]

(ii) Explain how this method is able to separate the mixture of water and oil.
Terangkan bagaimana kaedah ini dapat mengasingkan campuran minyak dan air.

4(a)(ii)
[ ]
1

[1 mark / 1 *markah*]

Untuk Kegunaan Pemeriksa

(b) Arrange the following steps in the correct sequence to separate a mixture of sand, fine salt and iron filings.

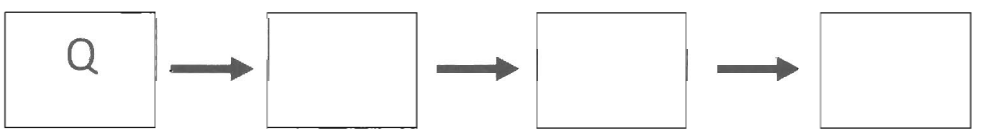
Susun langkah-langkah berikut dalam urutan yang betul untuk mengasingkan campuran pasir, garam halus dan serbuk besi.

P - Dissolving in water.
Melarutkan dalam air.

Q - Using a magnet
Menggunakan magnet

R - Evaporating
Menyejat

S - Filtrating
Menapis



[2 marks / 2 *markah*]

4(b) 2

(c) State the method to separate these mixture :

Nyatakan kaedah untuk mengasingkan campuran berikut:

i. Chalk and water : _____
Kapur dan air

ii. Sand and iron filings : _____
Pasir dan serbuk besi

[2 marks / 2 *markah*]

4(c) 2

Total A4 6

Untuk Kegunaan Pemeriksa

5 Diagram 5.1 shows two methods of water purification.

Rajah 5.1 *menunjukkan dua kaedah pembersihan air.*

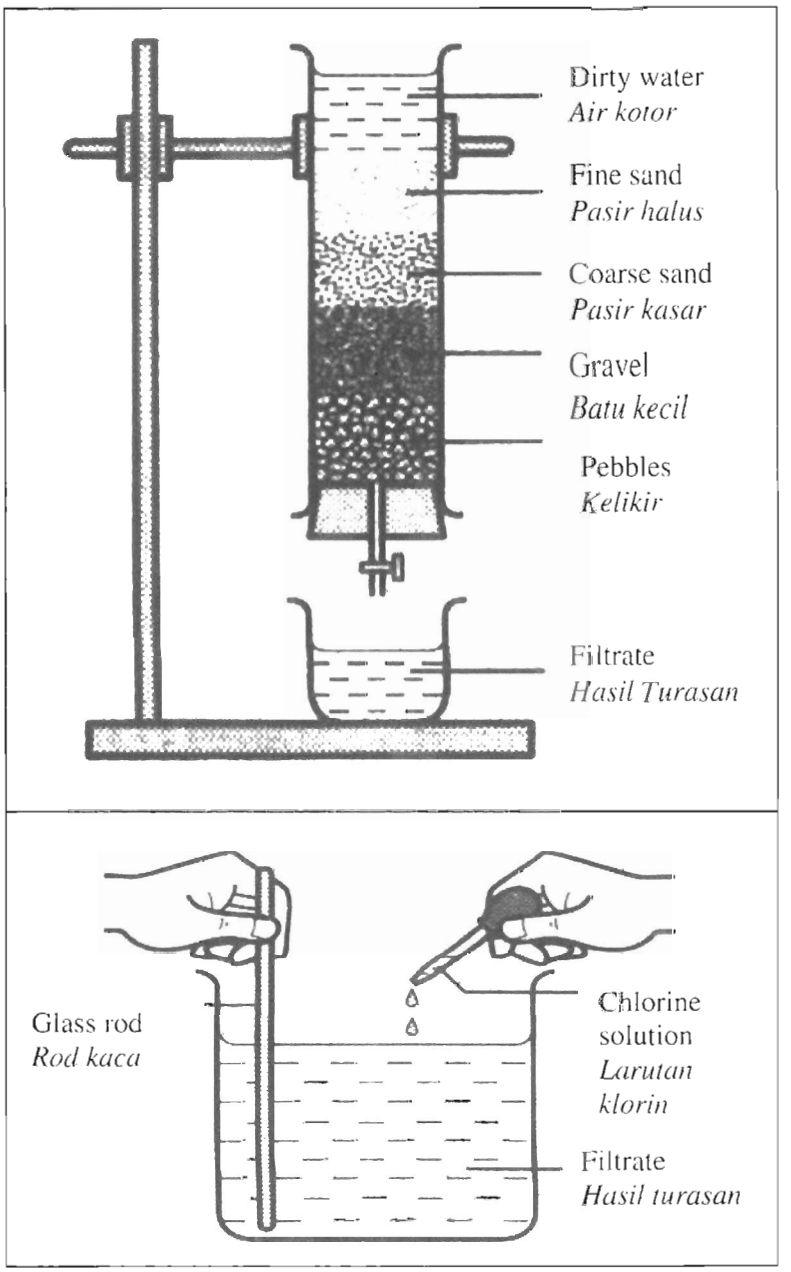


Diagram 5.1

Rajah 5.1

5(a)

(a) Mark (√) in the box provided the purification of water using filtration method.

Tandakan (√) pada petak yang disediakan pembersihan air menggunakan kaedah penurasan.

[1 mark / 1 *markah*]

Untuk Kegunaan Pemeriksa

(b) Diagram 5.2 shows the set-up of apparatus for an experiment. A few drops of acid is added to alkali solution until the solution turns green.

Rajah 5.2 menunjukkan susunan radas untuk satu eksperimen. Beberapa titik asid ditambah ke dalam larutan alkali sehingga larutan itu bertukar menjadi hijau.

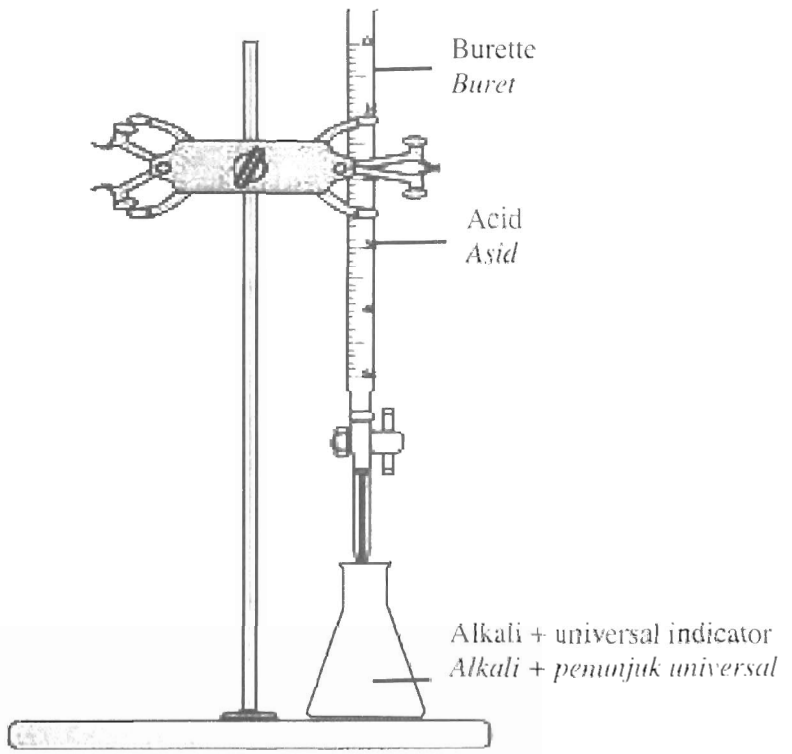


Diagram 5.2

Rajah 5.2

(i) Name the method used in the experiment as shown in Diagram 5.2.

Namakan kaedah yang digunakan dalam eksperimen ini seperti yang ditunjukkan dalam Rajah 5.2.

5(b)(i)

1

_____

[1 mark / 1 *markah*]

Untuk Kegunaan Pemeriksa

(ii) Name the chemical process that results from the reaction between the acid and the alkali.

Namakan proses kimia yang terhasil daripada tindak balas antara asid dengan alkali.

5(b)(ii)

1

_____

[1 mark / 1 *markah*]

(iii) What is the property of the solution in the conical flask at the point when the solution starts to turn green?

Apakah sifat larutan di dalam kelalang kon pada takat apabila larutan tersebut mula bertukar menjadi hijau?

5(b)(iii)

1

_____

[1 mark / 1 *markah*]

(iv) When the alkali used is sodium hydroxide solution and the acid is dilute hydrochloric acid, write the word equation showing the process in b (ii).

Apabila alkali yang digunakan ialah larutan natrium hidroksida dan asid ialah asid hidroklorik cair, tuliskan persamaan perkataan menunjukkan proses di b (ii).

5(b)(iv)

1

_____

_____

[1 mark / 1 *markah*]

(v) The experiment is repeated by using the same type of alkali but the acid is replaced with dilute sulphuric acid. Write the word equation for this reaction.
Eksperimen yang sama telah diulang menggunakan alkali yang sama tetapi asid telah digantikan dengan asid sulfurik cair. Tuliskan persamaan perkataan bagi tindak balas tersebut.

Untuk Kegunaan Pemeriksa

5(b)(v)

1

[1 mark / 1 *markah*]

(c) An experiment is carried out to neutralise 15 ml of alkali B by using acid C. Diagram 5.3 shows the changes of the pH value of alkali B when a few drops of acid C is added into it.
Satu eksperimen telah dijalankan untuk meneutralkan 15 ml *alkali* B *dengan menggunakan asid* C. *Rajah* 5.3 *menunjukkan perubahan nilai pH bagi alkali* B *apabila beberapa titik asid* C *dicampurkan ke dalamnya.*

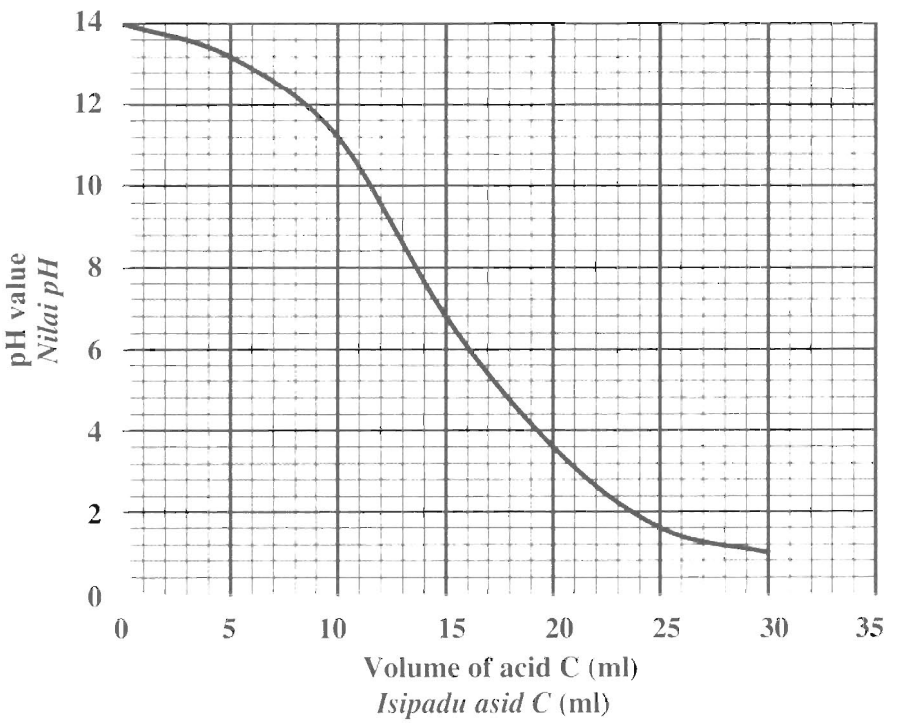


Diagram 5.3
Rajah 5.3

Untuk Kegunaan Pemeriksa

(i) Based on Diagram 5.3, state the volume of acid C required to neutralise 15 ml of alkali B.

Berdasarkan Rajah 5.3, *nyatakan isipadu asid* C *yang diperlukan untuk meneutralkan* 15 ml *akali* B.

5(c)(i)

1

[1 mark / 1 *markah*]

(d) Zalia was bitten by red ants while playing at the garden. She quickly applied calamine lotion on the bites. Explain how calamine lotion treats the bites.

Zalia telah digigit oleh semut merah ketika bermain di taman. Dia telah menyapu losyen kalamin pada gigitan itu dengan segera. Terangkan bagaimana losyen kalamin merawat gigitan tersebut.

5(d)

1

[1 mark / 1 *markah*]

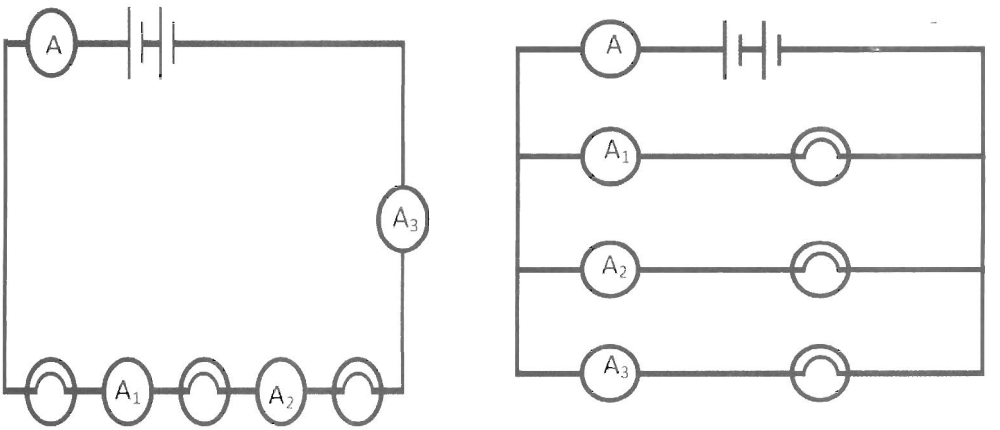
Total A5

8

Untuk Kegunaan Pemeriksa

6 (a) Diagram 6.1 shows a connection of three identical bulbs to two types of circuits, A and B.

Rajah 6.1 *menunjukkan tiga mentol yang serupa disambungkan kepada dua jenis litar* A *dan* B.



Circuit A
Litar A

Circuit B
Litar B

Diagram 6.1

Rajah 6.1

Circuit A is a series circuit and circuit B is a parallel circuit.

Litar A *ialah litar bersiri dan litar* B *ialah litar selari.*

(i) Give **one** reason why the bulbs in circuit B is brighter than the bulbs in circuit A.

Berikan **satu** *sebab mengapa mentol di dalam litar* B *lebih cerah berbanding di dalam litar* A.

_____

_____

[1 mark / 1 *markah*]

6(a)(i)

1

Untuk Kegunaan Pemeriksa

6(a)(ii)

1

(ii) State **one** advantage of circuit B.

Nyatakan **satu** *kebaikan bagi litar* B.

_____

[1 mark / 1 *markah*]

(b) An experiment is carried out by a student to study the relationship between the voltage and current and the result is shown in Table 6.1.

Satu eksperimen untuk mengkaji hubungan di antara voltan dan arus telah dijalankan oleh seorang pelajar dan keputusannya ditunjukkan dalam Jadual 6.1

Voltage (V) *Voltan* (V)	Current (I) *Arus* (I)	Voltage(V) /Current(I) *Voltan* (V)/*Arus*(I)
0	0	0
2	0.2	10
4	0.4	10
6	0.6	10
8	0.8	10
10	1.0	10

Table 6.1
Jadual 6.1

6(b)(i)

1

(i) Based on the Table 6.1, state the relationship between the voltage and current.

Berdasarkan Jadual 6.1, *nyatakan hubungan di antara voltan dan arus.*

_____

[1 mark / 1 *markah*]

6(b)(ii)

1

(ii) What does the ratio V/I represent in this experiment?

Apakah yang diwakili oleh nisbah V/I *dalam eksperimen ini*?

_____

[1 mark / 1 *markah*]

(iii) Write a formula to show the relationship between the resistance, voltage and current in the box provided.
Tuliskan satu formula untuk menunjukkan perhubungan di antara rintangan, voltan dan arus di dalam kotak yang disediakan.

Untuk Kegunaan Pemeriksa

[1 mark / 1 *markah*]

6(b)(iii) 1

(c) Diagram 6.2 shows an electric circuit. Calculate the current in the circuit if each cell has a voltage of 1.5 V
Rajah 6.2 *menunjukkan satu litar elektrik. Hitungkan arus di dalam litar tersebut jika setiap sel mempunyai voltan* 1.5 V.

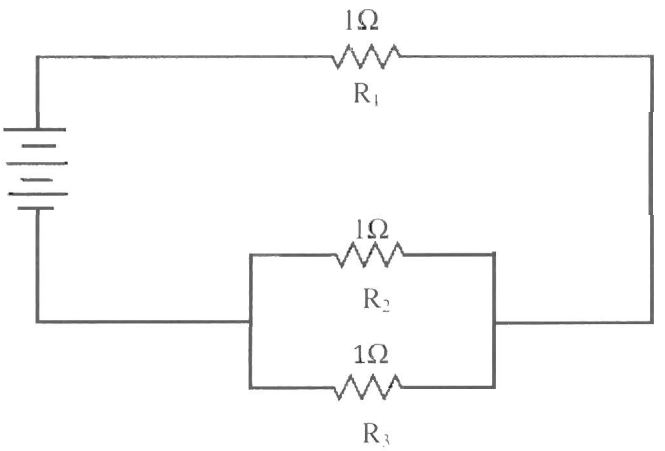


Diagram 6.2
Rajah 6.2

6(c) 3

[3 marks / 3 *markah*]

Total A6 8

Untuk Kegunaan Pemeriksa

Section B

Bahagian B

[20 marks]

[20 *markah*]

Answer **all** questions.

Jawab ***semua*** *soalan.*

7 (a) Diagram 7.1 shows the reading of spring balance when object **P** is in two different medium.

Rajah 7.1 menunjukkan bacaan neraca spring apabila objek **P** *berada dalam dua medium berbeza.*

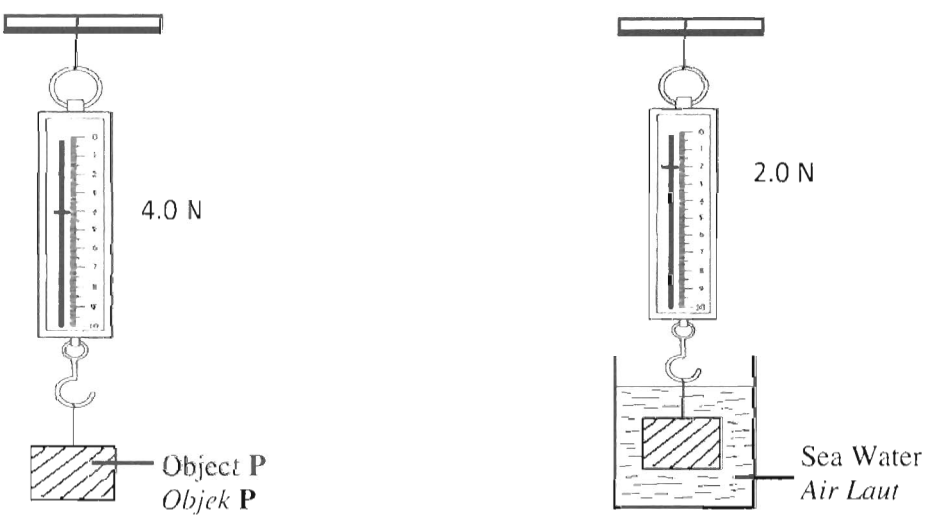


Diagram 7.1
Rajah 7.1

(a) (i) State **one** observation based on Diagram 7.1.

Nyatakan **satu** *pemerhatian berdasarkan Rajah* **7.1**.

7(a)(i)

I

[1 mark/1 *markah*]

Untuk Kegunaan Pemeriksa

(ii) State **one** inference based on the answer in 7(a)(i).

Nyatakan **satu** *inferens berdasarkan jawapan di* 7(a)(i).

7 (a)(ii) 1

[1 mark/1*markah*]

(iii) Diagram **7.2** shows three organisms. Based on Diagram **7.1**, tick (√) in the box provided the organism which experienced the same effect.

Rajah **7.2** *menunjukkan tiga organism. Berdasarkan Rajah* **7.1**, *tanda (√) dalam petak yang disediakan organism yang mengalami kesan yang sama.*

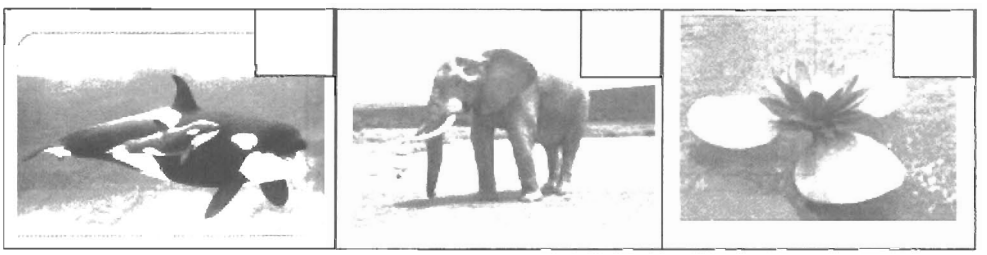


Diagram 7.2
Rajah 7.2

7 (a)(iii) 2

[2 marks/2 *markah*]

(iv) Explain why a whale's body is many time larger and heavier than an elephant's.

Terangkan mengapa badan seekor paus beberapa kali lebih besar dan berat berbanding seekor gajah.

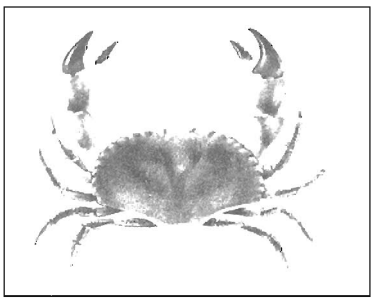
7 (a)(iv) 2

[2 marks/2 *markah*]

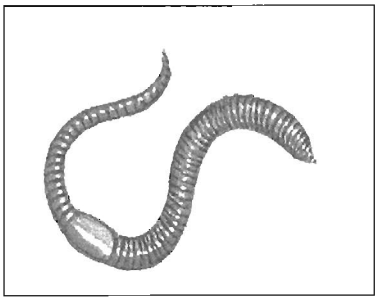
Untuk Kegunaan Pemeriksa

(b) Diagram **7.3** shows four animals, **R, S, T**, and **U**.

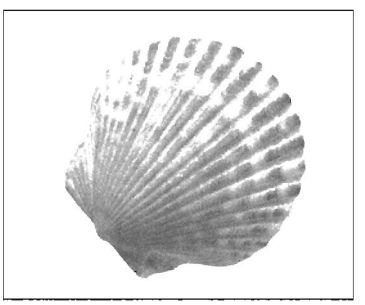
Rajah **7.3** *menunjukkan empat haiwan,* **R, S, T** *dan* **U**.



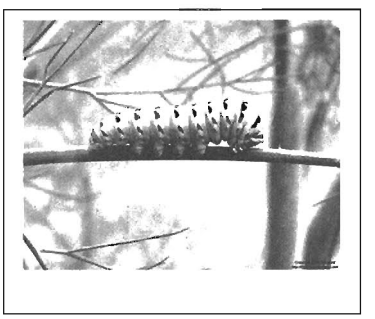
R



S



T



U

Diagram **7.3**

Rajah **7.3**

Classify animals **R, S, T**, and **U** into two groups based on their support system.

Kelaskan haiwan **R, S, T** *dan* **U** *kepada dua kumpulan berdasarkan sistem sokongan.*

Common characteristic *Ciri sepunya*	Animal **R,S,T**, and **U** *Haiwan* **R,S,T**, *dan* **U**
Exoskeleton *Rangka luar*	
Hydrostatic skeleton *Rangka hydrostatik*	

[2 marks/2 *markah*]

7 (b)

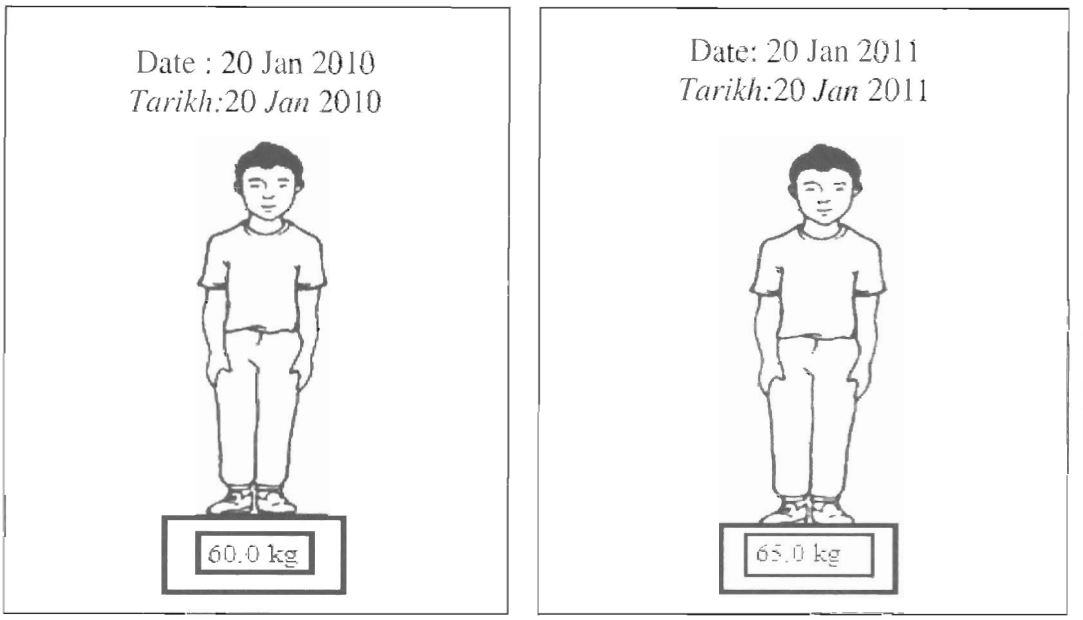
2

Total B7

8

Untuk Kegunaan Pemeriksa

8 Diagram 8.1 shows a student measuring his body mass at different time.
Rajah 8.1 *menunjukkan seorang pelajar menimbang jisim badannya pada masa yang berbeza.*



Age M
Umur M

Diagram 8.1
Rajah 8.1

Age N
Umur N

(a) Based on the observation in Diagram 8.1:
Berdasarkan pemerhatian dalam Rajah 8.1:

(i) Compare the difference in body weight between Age M and Age N.
Bandingkan perbezaan berat badan antara Umur M *dengan Umur* N.

8(a)(i)

1

_____

[1 mark / 1 *markah*]

(ii) State **one** relationship between the student's age and his body weight.
Nyatakan **satu** *hubungan antara umur pelajar dengan berat badannya.*

8(a)(ii)

1

_____

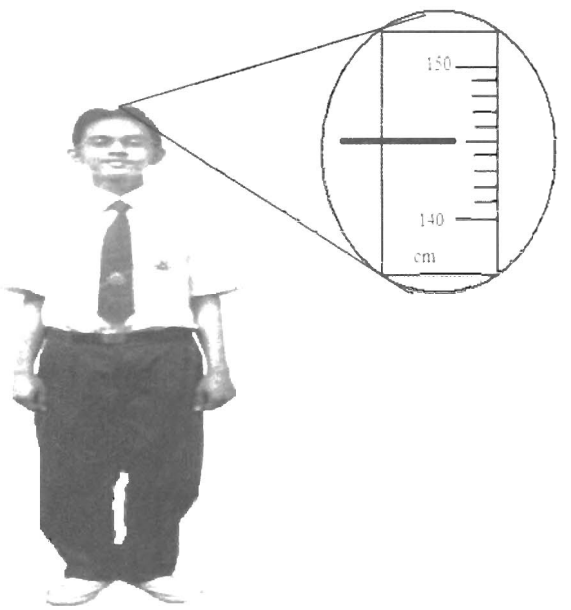
[1 mark / 1 *markah*]

Untuk Kegunaan Pemeriksa

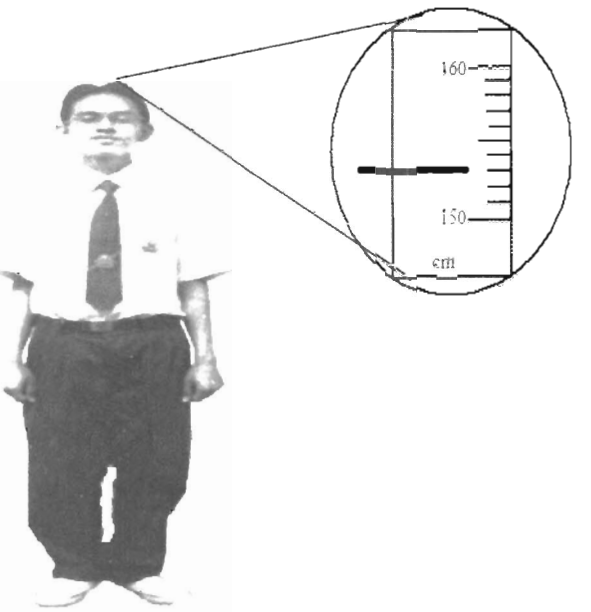
(b) A Form Five student measured his height every year starting from Form Two.

Diagram 8.2 shows four readings of his height.

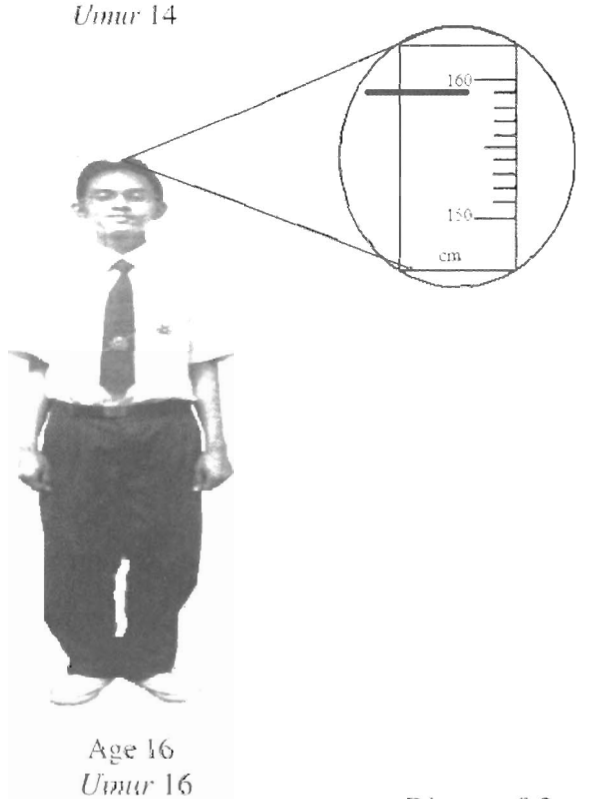
Seorang pelajar Tingkatan Lima telah menyukat tingginya setiap tahun bermula dari Tingkatan Dua. Rajah 8.2 menunjukkan empat bacaan ketinggiannya.



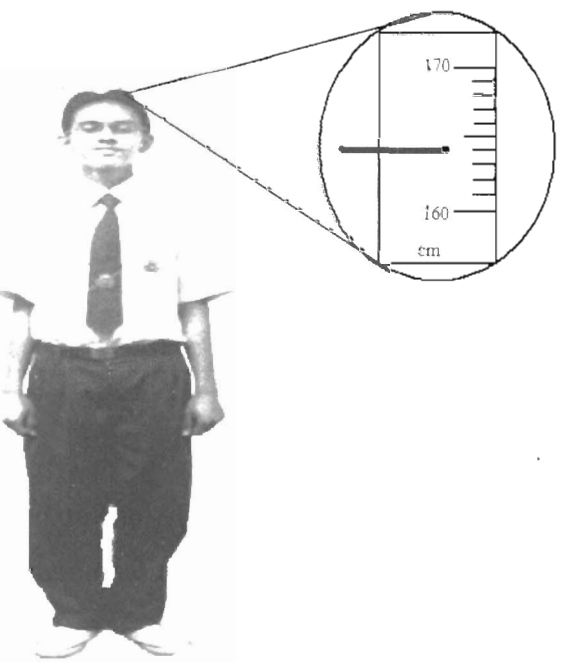
Age 14
Umur 14



Age 15
Umur 15



Age 16
Umur 16



Age 17
Umur 17

Diagram 8.2
Rajah 8.2

Untuk Kegunaan Pemeriksa

(i) Based on Diagram 8.2, complete Table 8.

Berdasarkan Rajah 8.2, *lengkapkan Jadual* 8.

Age (Year) *Umur* (Tahun)	Height (cm) *Tinggi* (cm)
14	145
15	
16	
17	

Table 8

Jadual 8

[2 marks / 2 *markah*]

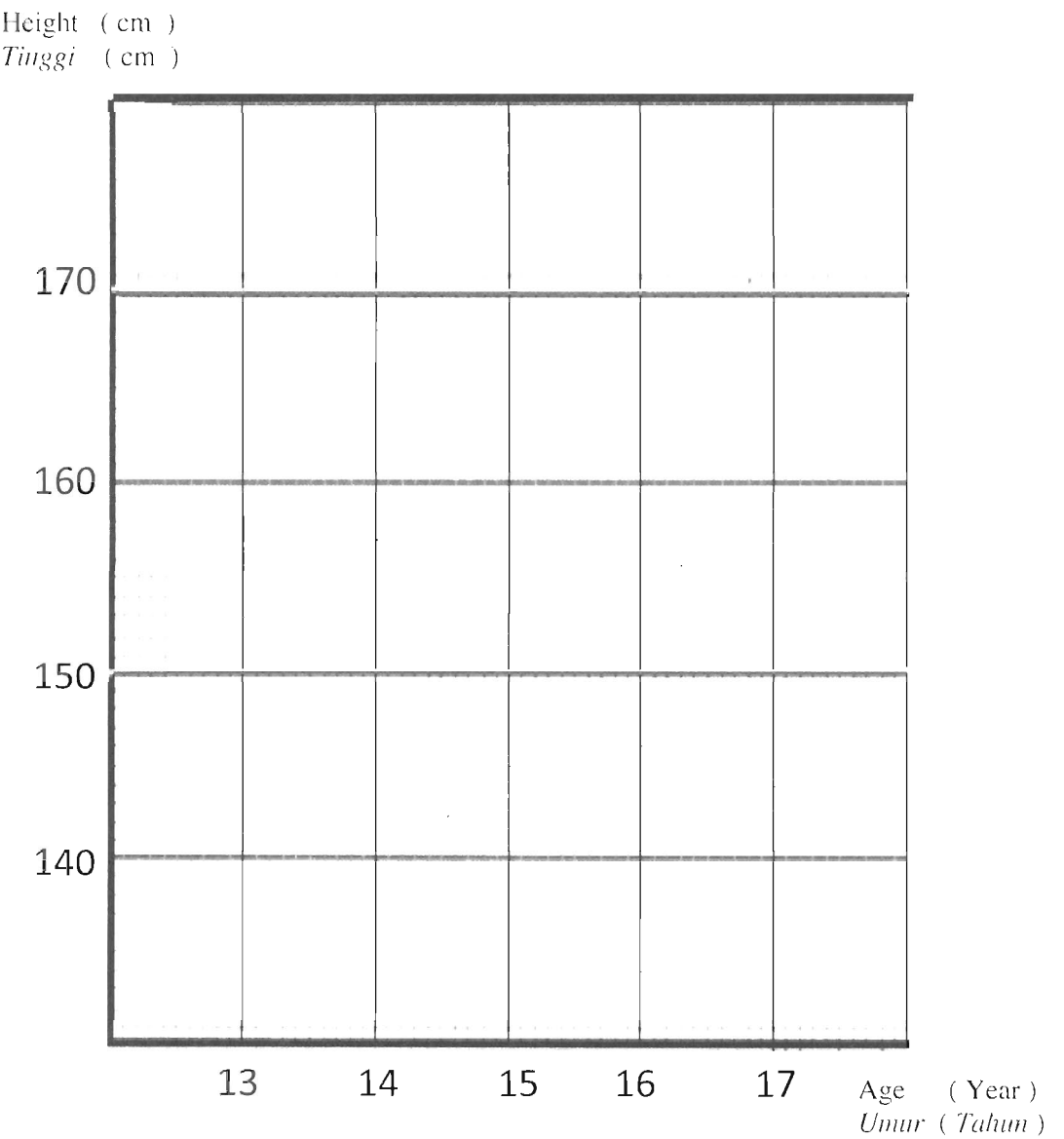
8(b)(i)

2

Untuk Kegunaan Pemeriksa

(ii) Based on the data in Table 8, draw a line graph to show the growth rate of the student.

Berdasarkan data dalam Jadual 8, lukis graf garis untuk menunjukkan kadar tumbesaran pelajar itu.



8(b)(ii)

2

[2 marks / 2 *markah*]

Untuk Kegunaan Pemeriksa

(iii) Based on the line graph drawn in 8(b)(ii), state one relationship between the student's age and his height.

Berdasarkan graf garis yang dilukis dalam 8(b)(ii), *nyatakan hubungan antara umur pelajar tersebut dengan ketinggiannya.*

_____

_____

[1 mark / 1 *markah*]

8(b)(iii) 1

(iv) Based on the line graph in 8(b)(ii), predict the student's height when he is eighteen years old.

Berdasarkan graf garisan di 8 (b) (ii), *ramalkan ketinggian pelajar apabila umurnya lapan belas tahun.*

_____

[1 mark / 1 *markah*]

8(b)(iv) 1

(c) State the variables involved in this activity.

Nyatakan pembolehubah yang terlibat dalam aktiviti ini.

Manipulated variable *Pembolehubah dimanipulasi*	
Responding variable *Pembolehubah bergerak balas*	

[2 marks / 2 *markah*]

8(c) 2

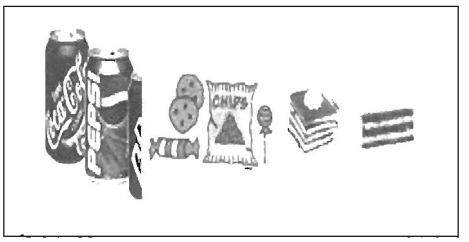
Untuk Kegunaan Pemeriksa

(d) Diagram 8.3 shows four groups of food, P, Q, R and S.

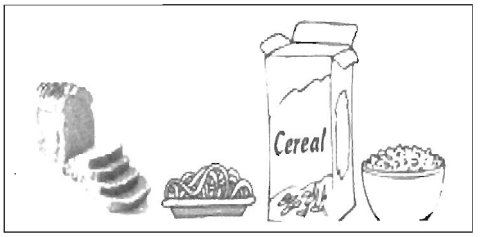
Rajah 8.3 *menunjukkan empat kumpulan makanan,* P, Q, R *dan* S.

P

Q



R



S

Diagram 8.3
Rajah 8.3

Based on Diagram 8.1 and Table 8, classify the groups of food in Diagram 8.3 which should be taken more in quantity for normal growth.

Berdasarkan Rajah 8.1 *dan Jadual* 8, *kelaskan kumpulan makanan dalam Rajah* 8.3 *yang perlu diambil lebih untuk pertumbuhan normal.*

Quantity *Kuantiti*	**Groups of food** *Kumpulan makanan*
Consumed more *Pengambilan lebih*	
Consumed less *Pengambilan kurang*	

Diagram 8.3
Rajah 8.3

[2 marks / 2 *markah*]

8(d)

2

Total B8

12

END OF QUESTION PAPER
KERTAS SOALAN TAMAT

JSI & SKEMA JAWAPAN SCIENCE PMR KERTAS 1 PROGRAM PENINGKATAN AKADEMIK PMR 2011

TOPIC / SUB TOPIC		Item		Aras Kesukaran			Stimuli	
		S	J	R	S	T	Rajah	Jadual
1.2	Steps in scienctific investigation	1	**B**	1			1	
2.1	Cells	2	**A**	1				
3.3	Density	3	**C**		1			
4.2	Elements, compounds and mixtures	4	**A**		1		2	
5.1	The composition of air	5	**D**	1			3	
5.4	Oxygen is needed for combustion	6	**B**	1			4	
6.2	Renewable and non-renewable energy sources	7	**A**	1				
7.2	Heat flow and its effect	8	**B**	1			5	
7.4	Application of expansion and contraction of matter	9	**A**		1			
8.6	Sense of sight	10	**B**	1			6	
8.8	Sound and hearing	11	**B**		1			
8.9	Stimuli and responses in plants	12	**B**	1				
9.2	The importance of a balanced diet	13	**C**		1			
9.5	Reabsorption of water and defecation	14	**A**		1		7	
10.1	Organisms and their classification	15	**A**	1				
11.2	Interaction between living organisms	16	**C**	1			8	
12.2	Composition of water	17	**D**	1			9	
12.4	Solution and solubility	18	**D**			1		
13.2	Application of the principle of air pressure	19	**A**	1			10	
14.3	Application of frictional force	20	**D**	1			11	
14.5	Application of power	21	**B**			1	12	
15.1	Support systems in animals	22	**D**	1				
15.2	Support systems in plants	23	**A**	1			13	
16.1	Stability	24	**A**		1		14	
17.1	Levers	25	**D**		1		15	
17.2	Appreciating the innovative efforts in the design of	26	**C**	1			16	
	machines to simplify work							
18.1	Human breathing mechanism	27	**C**		1			
19.3	Transport system in plants	28	**B**		1		17	
20.1	Human excretion	29	**D**	1			18	
20.2	Human urinary system	30	**C**	1				
21.1	Sexual and asexual reproduction	31	**C**	1				
21.9	Pollination	32	**D**	1			19	
22.1	The pattern of human growth	33	**C**	1				
23.2	Reactions between metals and non-metals	34	**B**		1		20	
24.3	Measuring electricity	35	**C**		1		21	
24.8	Magnetism	36	**D**	1			22	
25.6	Functions of fuse and earth wire	37	**C**			1	23	
25.7	The importance of safety precautions in the use of	38	**D**	1				
	electricity							
26.1	The Sun	39	**B**	1			24	
27.1	Developments in the field of astronomy and space	40	**A**	1				
	exploration							
				25	12	3	24	0

BILANGAN JAWAPAN	A	10
BILANGAN JAWAPAN	B	10
BILANGAN JAWAPAN	C	10
BILANGAN JAWAPAN	D	10
JUMLAH		40

55/2
SCIENCE
PMR
Ogos 2011

PEPERIKSAAN PERCUBAAN
PENILAIAN MENENGAH RENDAH 2011

SCIENCE
KERTAS 2

PERATURAN PEMARKAHAN

UNTUK KEGUNAAN PEMERIKSA SAHAJA

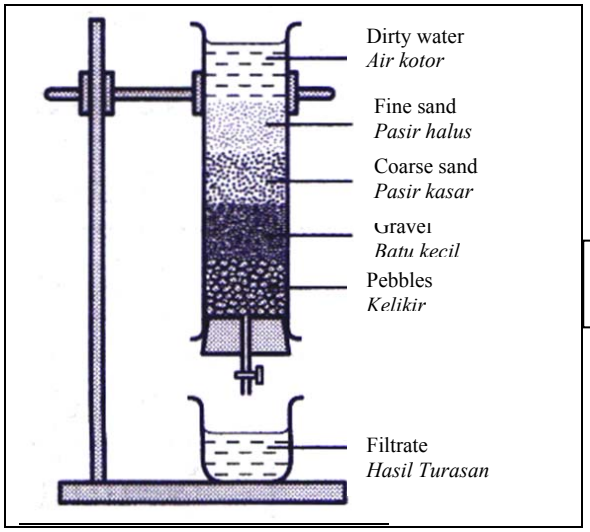
Peraturan pemarkahan ini mengandungi halaman bercetak

Question/ No *Soalan / No*	Scheme / *Skema*	Marks *Markah*	Total Marks *Jumlah markah*
1(a)	*Able to label parts P, Q, and R correctly* Sample answer P : Medulla Q : Pelvis R : Cortex	 1 1 1	 3
(b)	*Able to match the organ with its function.* Sample answer Organ — Function X — To filter blood Y — To remove urine from the body Z — Place where urine is stored temporarily To carry urine to the urinary bladder	 1 1 1	 3
	TOTAL /*JUMLAH*		6

Question/ No *Soalan / No*	Scheme / *Skema*	Marks *Markah*	Total Marks *Jumlah Markah*
2(a)	*Able to name the process*. Sample answer Nuclear fusion	1	1
(b) i)	*Able to name the phenomena on the surface of the Sun.* Sample answer Sunspots	1	1
(ii)	*Able to state a reason*. Sample answer 1. Q is cooler than other parts of the Sun's surface.// *2.* The temperature in Q is lower than the temperature in the other parts of the Sun's surface. *[Accept any suitable answer]*	1	1
(c) i)	*Able to state a process correctly.* Sample answer Supernova	1	1
(ii)	*Able to predict correctly.* Sample answer The size of core will become smaller and the process of nuclear fusion stops. *[Accept any suitable answer]*	1	1
(iii)	*Able to give the characteristic correctly.* Sample answer *1.* It has the strongest gravitational force // *2.* It has higher density. *[Accept any suitable answer]*	1	1
	TOTAL /*JUMLAH*		**6**

Question/ No *Soalan / No*	Scheme / *Skema*	Marks *Markah*	Total Marks *Jumlah Markah*
3(a)(i)	*Able to name the process*. Sample answer Diffusion	1	1
(ii)	*Able to give an explanation / reason.* Sample answer The diffusion process in P is slower because the arrangement of particles in P are closely packed // close to each other.	1	1
(b) i)	*Able to obtain information from the table given.* Sample answer Air	1	1
(ii)	*Able to give a reason*. Sample answer The particles in R arranged very far apart from one another // There is a big space // a lot of space between the particles in R. [Accept any suitable answer]	1	1
(c)(i)	*Able to state the movement of particles correctly.* Sample answer The particles in hot air balloon move fast	1	1
(ii)	*Able to state the factor required for the process.* Sample answer Heat	1	1
	TOTAL /*JUMLAH*		**6**

Question/ No *Soalan / No*	Scheme / *Skema*	Marks *Markah*	Total Marks *Jumlah Markah*
4(a)(i)	*Able to name the method that is used in the diagram.* Sample answer By using a separation funnel	1	1
(ii)	*Able to explain how the method named able to separate the mixture of water and oil.* Sample answer This method is able to separate the mixture because water and oil do not mix together. The water is denser than oil.	1	1
(b)	*Able to arrange in a correct sequence a method used to separate the mixture of sand, fine salt and iron fillings.* Sample answer Q → P → S → R ***3 Corrects – 2 marks 2 Corrects – 1 marks 0-1 Corrects – 0 marks	2	2
(c)	*Able to state the method to separate the mixture.* Sample answer 1. Filtration 2. Separating using a magnet	1 1	2
	TOTAL /*JUMLAH*		6

Question/ No *Soalan / No*	Scheme / *Skema*	Marks *Markah*	Total Marks *Jumlah Markah*
5 a)	*Able to mark (√) in the box provided the purification of water using filtration method.* Sample answer  √	1	1
(b)(i)	*Able to name the method used for mixing the acid and the alkali as shown in Diagram 5.2.* Sample answer Titration	1	1
(ii)	*Able to name the chemical process that results the reaction between acid and the alkali.* Sample answer *Neutralisation*	1	1
(iii)	*Able to state the properties of the solution in the conical flask at the point when the solution starts to turn green.* Sample answer Neutral	1	1
(iv)	*Able to write the word equation showing the neutralization process between hydrochloric acid and sodium hydroxide solution.* Sample answer Hydrochloric acid + sodium hydroxide → **sodium chloride** + water **NOTES: Sodium chloride must be mention. Do not accept, if only salt written without the name of the salt.**	1	1

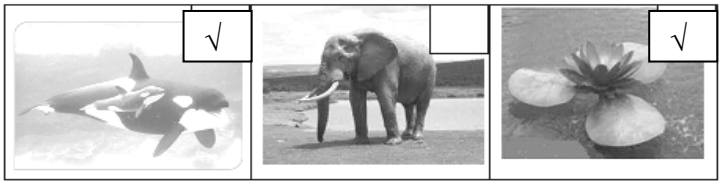
(v)	*Able to write the word equation showing the neutralization process between sulphuric acid and sodium hydroxide solution*. Sample answer Sulphuric acid + sodium hydroxide → **sodium sulphate** + water **NOTES: Sodium sulphate must be mention. Do not accept, if only salt written without the name of the salt.**	1	1
(c)(i)	*Able to state the volume of acid C required neutralizing 15 ml of alkali B*. Sample answer 14.5 ± 0.5 ml	1	1
(d)	*Able to explain how calamine lotion treats the bites*. Sample answer A Red Ant bite is acidic while the calamine lotion is an alkali. Calamine lotion will neutralize the red ant's bites.	1	1
	TOTAL /*JUMLAH*		**8**

Question/ No Soalan / No	Scheme / Skema	Marks Markah	Total Marks Jumlah markah
6(a)(i)	*Able to state the reason.* Sample answer 1. The current flow in circuit B is higher//greater/the resistance in circuit B is lower 2. The current flow in circuit A is lower/the resistance in circuit A is higher	1	1
(ii)	*Able to give the advantages.* Sample answer 1. If one component in the circuit breakdown the others is still functioning 2. Save the usage of electricity	1	1
(b)(i)	*Able to state the relationship between voltage and current* Sample answer The higher/bigger the voltage, the higher/bigger the current flow	1	1
(ii)	*Able to state what is represented by the ratio of V/I* Sample answer Resistance	1	1
(iii)	*Able to write the formula to show the relationship between the resistance, voltage and current.* Sample answer $R = \frac{V}{I}$	1	1
(c)	*Able to calculate the current flow.* Sample answer $\frac{1}{R} = \frac{1}{R_3} + \frac{1}{R_2}$ $R_{total} = R + R_1$ $R_{total} = \frac{1}{2} + 1$ $= 1.5$ $I = \frac{V}{R}$ $= \frac{4.5}{1.5}$ $= 3$ A **** the unit must be written*	1 1 1	**3**
	TOTAL /*JUMLAH*		**8**

<table>
<tr><th>Question/ No
Soalan / No</th><th>Scheme / Skima</th><th>Marks
Markah</th><th>Total Marks
Jumlah Markah</th></tr>
<tr><td>7(a)(i)</td><td>Able to state an observation.
<u>Sample answer</u>

Object P is lighter in sea water than in the air.// vice versa.</td><td>1</td><td>1</td></tr>
<tr><td>(ii)</td><td>Able to state an inference.
<u>Sample answer</u>

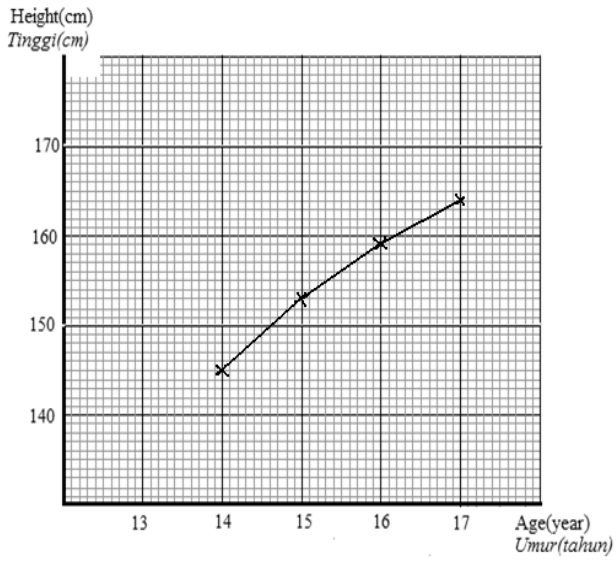
Object P is lighter in sea water because of water buoyancy/water uptrust.</td><td>1</td><td>1</td></tr>
<tr><td>(iii)</td><td>Able to choose the correct organism.
<u>Sample answer</u>

 
</td><td>2</td><td>2</td></tr>
<tr><td>(iv)</td><td>Able to explain water organism is supported by buoyancy.
<u>Sample answer</u>

In (sea) water, whales’ body is supported by water buoyancy.

1 mark 1 mark</td><td>2</td><td>2</td></tr>
<tr><td>(b)</td><td>Able to classify the animals.
<u>Sample answer</u>

<table><tr><td>Manipulated variable</td><td>R and U/crab and cockle</td></tr><tr><td>Responding variable</td><td>S and T/ earthworm and caterpillar</td></tr></table></td><td>2</td><td>2</td></tr>
<tr><td></td><td>TOTAL /JUMLAH</td><td></td><td>8</td></tr>
</table>

Question/ No Soalan / No	Scheme / Skima	Marks Markah	Total Marks Jumlah Markah
8(a)(i)	*Able to compare the difference in body weight.* Sample answer Age N has a higher body weight than Age M.	1	1
(ii)	*Able to state the relationship between the student's age and the body weight.* Sample answer When the student's age increases, the body weight also increases.	1	1
(b)(i)	*Able to complete the table.* Sample answer 15^{th} years - 153 cm 16^{th} years - 159 cm 17^{th} years - 164 cm ***3 Corrects – 2 marks 2 Corrects – 1 marks 0-1 Corrects – 0 marks	1 1	2
(ii)	*Able to draw the line graph to show the growth rate of the student.* Sample answer  *** Note: All point (4) correct – 1 mark Connection all point - 1 mark	1 1	2
(iii)	*Able to state the relationship between the student age and the height* Sample answer 1. As the student's age increases, the height also increases. 2. The boy height increase when his age increases.	1	1

<table>
<tr>
<td>(iv)</td>
<td>Able to predict the student's height.
<u>Sample answer</u>

Between 169 cm to 172 cm
*** accept any measurement between 169 cm to 172cm</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>(c)</td>
<td>Able to state the variable involved.
<u>Sample answer</u>

<table>
<tr><td>Manipulated variable</td><td>Age</td></tr>
<tr><td>Responding variable</td><td>Height</td></tr>
</table>
</td>
<td>1

1</td>
<td>

2</td>
</tr>
<tr>
<td>(d)</td>
<td>Able to classify the groups of nutrient.
<u>Sample answer</u>

<table>
<tr><th>Quantity</th><th>Groups of food</th></tr>
<tr><td>Consumed more</td><td>P, S</td></tr>
<tr><td>Consumed less</td><td>Q, R</td></tr>
</table>
</td>
<td>

1

1</td>
<td>

2</td>
</tr>
<tr>
<td></td>
<td>TOTAL /JUMLAH</td>
<td></td>
<td>12</td>
</tr>
</table>