

- 3 Diagram 3 shows four organisms, R, S, T and U.
Rajah 3 menunjukkan empat organisma, iaitu R, S, T, dan U.

2.2 R

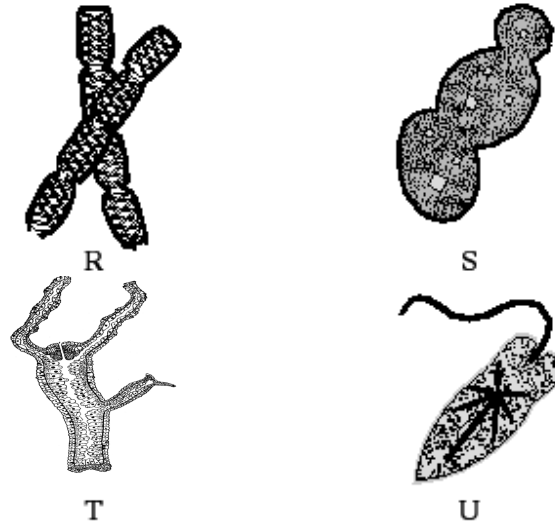


Diagram 3
Rajah 3

What are these organisms?
Apakah organisma-organisma ini?

	R	S	T	U
A	Spirogyra <i>Spirogira</i>	Yeast <i>Yis</i>	Hydra <i>Hidra</i>	Euglena <i>Euglena</i>
B	Euglena <i>Euglena</i>	Hydra <i>Hidra</i>	Amoeba <i>Ameba</i>	Yeast <i>Yis</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>

- 6 Which of the following is correct?
Antara berikut, yang manakah benar?

4.2 S

	Element <i>Unsur</i>	Compound <i>Sebatian</i>	Mixture <i>Campuran</i>
A	Copper <i>Kuprum</i>	Water <i>Air</i>	Steel <i>Keluli</i>
B	Oxygen <i>Oksigen</i>	Common salt <i>Garam biasa</i>	Soil <i>Tanah</i>
C	Gold <i>Emas</i>	Petroleum <i>Petroleum</i>	Sand <i>Pasir</i>
D	Sulphur <i>Sulfur</i>	Sugar <i>Gula</i>	Carbon dioxide <i>Karbon dioksida</i>

- 7 Gas X is tested using alkaline pyrogallol solution and a glowing wooden splinter. The results of the tests are shown in Diagram 5.
Gas X diuji dengan larutan pirogallol beralkali dan dengan kayu uji berbara. Keputusan ujian ditunjukkan dalam Rajah 5.

5.3 R

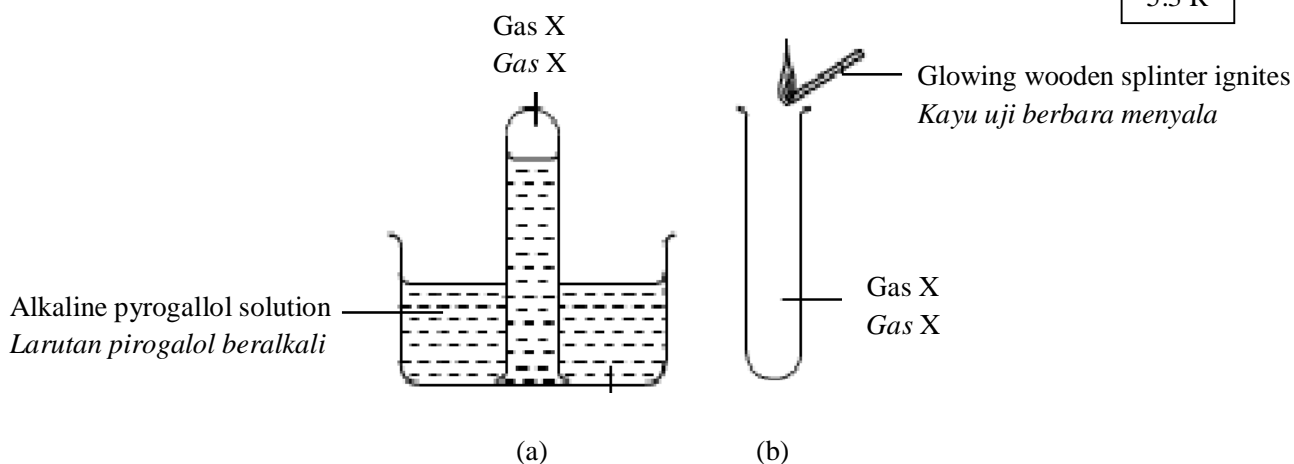


Diagram 5
Rajah 5

What is gas X?
Apakah gas X?

- | | |
|--------------------------------------|---|
| A Oxygen
<i>Oksigen</i> | C Hydrogen
<i>Hidrogen</i> |
| B Nitrogen
<i>Nitrogen</i> | D Carbon dioxide
<i>Karbon dioksida</i> |

- 8 Table 1 shows the Air Pollution Index (API) of four Malaysian cities which has been recorded for a week.

Jadual 1 menunjukkan Indeks Pencemaran Udara (IPU) yang direkodkan sepanjang minggu untuk empat buah bandar di Malaysia.

5.4 R

Cities <i>Bandar</i>	Air Pollution Index (API) <i>Indeks Pencemaran Udara (IPU)</i>						
	M	T	W	T	F	S	S
A	23	15	25	30	32	28	25
B	200	210	196	185	190	201	205
C	101	100	100	108	106	110	105
D	68	65	60	58	60	58	50

Table 1
Jadual 1

Which of the cities, **A**, **B**, **C** or **D**, is free of air pollution?

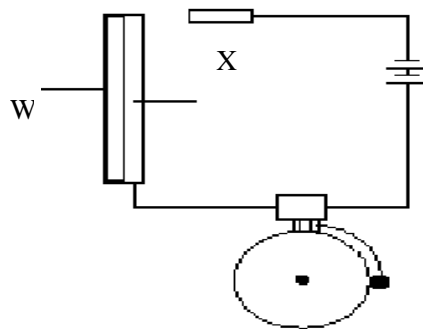
*Antara bandar **A**, **B**, **C** atau **D**, yang manakah bebas daripada pencemaran udara?*

- 9 Which of the following examples of renewable and non-renewable energy sources are correct?
Antara berikut, manakah yang betul tentang contoh sumber tenaga yang boleh diperbaharui dan yang tidak boleh diperbaharui?

6.2 S

	Renewable energy sources <i>Sumber tenaga yang boleh diperbaharui</i>	Non-renewable energy sources <i>Sumber tenaga yang tidak boleh diperbaharui</i>
A	Fossil fuels <i>Bahan api</i>	Geothermal <i>Geoterma</i>
B	Wind <i>Angin</i>	Radioactive metals <i>Logam radioaktif</i>
C	Sun <i>Matahari</i>	Biomass <i>Biojisim</i>
D	Radioactive metals <i>Logam radioaktif</i>	Waves <i>Ombak</i>

- 10 Diagram 6 shows the use of a bimetallic strip in an automatic fire alarm.
Rajah 6 menunjukkan penggunaan jalur dwilogam di dalam penggera kebakaran automatik.



7.4 T

Diagram 6
Rajah 6

The bimetallic strip operates based on the principle that
Jalur dwilogam beroperasi berdasarkan kepada prinsip bahawa

- | | | | |
|----------|--|----------|---|
| A | W and X expand equally
<i>W dan X mengembang sama rata</i> | C | X expands more than W
<i>X mengembang lebih daripada W</i> |
| B | W and X do not expand at all
<i>W dan X tidak mengembang langsung</i> | D | W expands more than X
<i>W mengembang lebih daripada X</i> |
- 11 Diagram 7 shows the structure of the human ear.
Rajah 7 menunjukkan struktur telinga manusia.

8.5 S

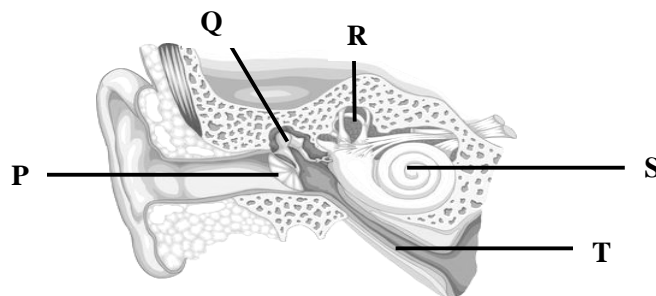


Diagram 7
Rajah 7

Which of the following is not involved in the hearing mechanism?
Antara berikut, yang manakah tidak terlibat dalam mekanisme pendengaran?

- | | | | |
|----------|---------------------------|----------|---------------------------|
| A | P only
<i>P sahaja</i> | C | R and T
<i>R dan T</i> |
| B | R only
<i>R sahaja</i> | D | Q and S
<i>Q dan S</i> |

- 12 The following statement shows the responses of plants towards stimuli.
Pernyataan berikut menunjukkan gerak balas tumbuhan terhadap rangsangan.

8.9 R

- A pitcher plant traps insects.
Tumbuhan periuk kera memerangkap serangga.
- The leaves of *mimosa pudica* plant fold up when touched.
Daun tumbuhan semalu menguncup ketika disentuh.

Which of the following responses is shown by the pitcher and *mimosa pudica* plants?
Antara berikut, gerak balas yang manakah ditunjukkan oleh tumbuhan periuk kera dan tumbuhan semalu?

- | | |
|--|--|
| A Nastic movement
<i>Pergerakan nastik</i> | C Phototropism
<i>Fototropisme</i> |
| B Thigmotropism
<i>Tigmotropisme</i> | D Geotropism
<i>Geotropisme</i> |

- 13 Diagram 8 shows the human digestive system.
Rajah 8 menunjukkan sistem pencernaan manusia.

9.3 S

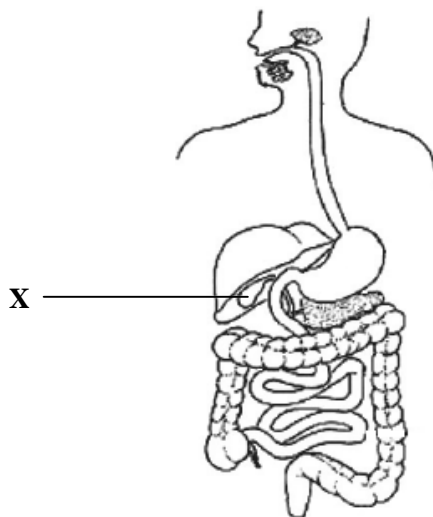


Diagram 8

Rajah 8

Which of the following statements is correct regarding X?
Antara pernyataan berikut, yang manakah benar mengenai X?

- A** Digests carbohydrates, proteins and fats.
Mencernakan karbohidrat, protein dan lemak.
- B** Stores hydrochloric acid.
Menyimpan asid hidroklorik.
- C** Helps to kill bacteria in food.
Membantu membunuh bakteria dalam makanan.
- D** Stores bile.
Menyimpan jus hempedu.

- 14** Diagram 9 shows a villus found in the small intestine.
Rajah 9 menunjukkan vilus yang terdapat di dalam usus kecil.

9.4 S

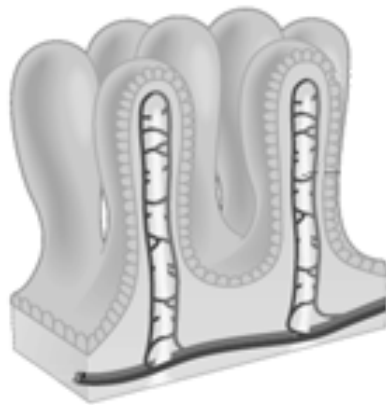


Diagram 9
Rajah 9

Which of the following characteristics of the villus help in the absorption of digested food?
Antara ciri-ciri berikut, yang manakah membantu vilus dalam penyerapan makanan tercerna?

- | | |
|---|--|
| A Small in number
<i>Bilangan yang sedikit</i> | C Secretes enzymes for digestion
<i>Merembeskan enzim untuk pencernaan</i> |
| B Large surface area
<i>Luas permukaan yang besar</i> | D Having thick wall
<i>Mempunyai dinding yang tebal</i> |

- 15 Diagram 10 shows a type of fern.
Rajah 10 menunjukkan sejenis paku-pakis.

10.1 R



Diagram 10
Rajah 10

Which of the following is correct?
Antara berikut, yang manakah benar?

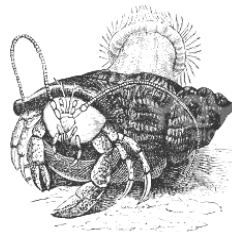
- | | |
|---|---|
| A It has flower.
<i>Mempunyai bunga.</i> | C It reproduces by budding.
<i>Mebiak melalui penunasan.</i> |
| B It has tap root.
<i>Mempunyai akar tunjang.</i> | D It can make its own food.
<i>Boleh membuat makanan sendiri.</i> |

- 16 Diagram 11 shows three types of interaction between living organisms.
Rajah 11 menunjukkan tiga jenis interaksi antara organisma hidup.

11.1 R



R



S



T

Diagram 11
Rajah 11

What are the types of interaction represented by R, S and T?
 Apakah jenis interaksi yang diwakili oleh R, S, dan T?

	R	S	T
A	Commensalism <i>Komensalisme</i>	Parasitism <i>Parasitisme</i>	Mutualism <i>Mutualisme</i>
B	Competition <i>Persaingan</i>	Prey-predator <i>Mangsa pemangsa</i>	Commensalism <i>Komensalisme</i>
C	Prey-predator <i>Mangsa pemangsa</i>	Mutualism <i>Mutualisme</i>	Competition <i>Persaingan</i>
D	Parasitism <i>Parasitisme</i>	Commensalism <i>Komensalisme</i>	Prey-predator <i>Mangsa pemangsa</i>

17 Diagram 12 shows a food chain.

Rajah 12 menunjukkan satu rantai makanan.

11.3 R

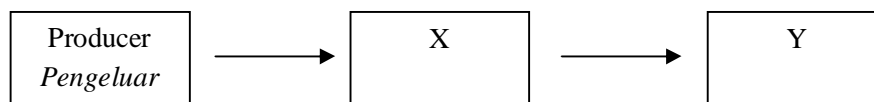


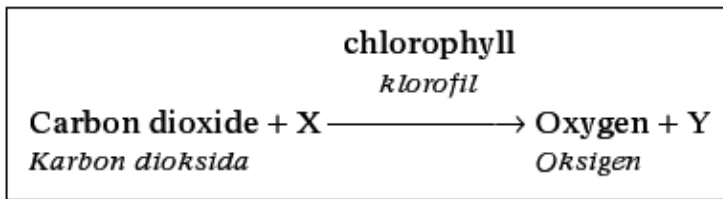
Diagram 12
Rajah 12

What is X and Y in the food chain?

Apakah X dan Y di dalam rantai makanan tersebut?

	X	Y
A	Decomposer <i>Pengurai</i>	Tertiary consumer <i>Pengguna tertier</i>
B	Primary consumer <i>Pengguna primer</i>	Tertiary consumer <i>Pengguna tertier</i>
C	Secondary consumer <i>Pengguna sekunder</i>	Tertiary consumer <i>Pengguna tertier</i>
D	Primary consumer <i>Pengguna primer</i>	Secondary consumer <i>Pengguna sekunder</i>

- 18 The following word equation represents the reaction which occurs during photosynthesis.
Persamaan perkataan berikut mewakili tindak balas yang berlaku semasa proses fotosintesis.



11.4 T

What do X and Y represent?
Apakah yang mewakili X dan Y?

	X	Y
A	Nitrogen <i>Nitrogen</i>	Water <i>Air</i>
B	Glucose <i>Glukosa</i>	Water <i>Air</i>
C	Glucose <i>Glukosa</i>	Hydrogen <i>Hidrogen</i>
D	Water <i>Air</i>	Glucose <i>Glukosa</i>

- 19 Diagram 13 shows an experiment conducted to study the composition of water.
Rajah 13 menunjukkan satu eksperimen yang dijalankan untuk mengkaji komposisi air.

12.2 S

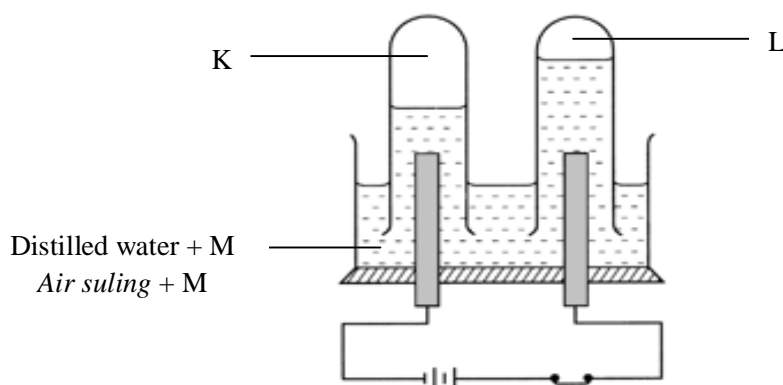


Diagram 13
Rajah 13

Name the gases labelled K, L and substance M.
 Namakan gas-gas berlabel K, L dan bahan M.

	K	L	M
A	Hydrogen Hidrogen	Oxygen Oksigen	Dilute sulphuric acid Asid sulfurik cair
B	Nitrogen Nitrogen	Oxygen Oksigen	Lime water Air kapur
C	Oxygen Oksigen	Hydrogen Hidrogen	Dilute sulphuric acid Asid sulfurik cair
D	Hydrogen Hidrogen	Nitrogen Nitrogen	Iodine solution Larutan iodin

- 20 Diagram 14 shows how solution R is prepared by dissolving 12g of salt in 150cm³ water.
 Rajah 14 menunjukkan bagaimana larutan R disediakan dengan melarutkan 12g garam dalam 150cm³ air.

12.4 R



R

Diagram 14
 Rajah 14

What type of solution is formed?
 Apakah jenis larutan yang terbentuk?

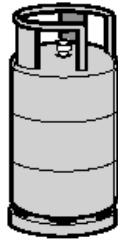
- | | |
|--|--------------------------------------|
| A Concentrated solution
Larutan pekat | C Saturated solution
Larutan tepu |
| B Dilute solution
Larutan cair | D Normal solution
Larutan biasa |

21 In which of the following tools uses air pressure?

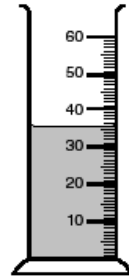
Antara alat yang berikut, manakah yang melibatkan prinsip tekanan udara?

13.2 S

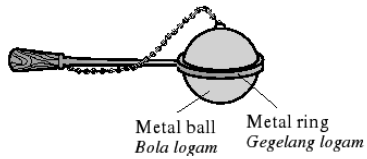
A



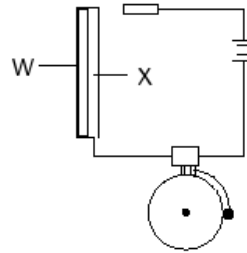
B



C



D



22 Diagram 15 shows a student pulling his luggage through a distance of 2.0 m with a force of 35.0 N.
Rajah 15 menunjukkan seorang pelajar menarik beg sejauh 2.0 m dengan menggunakan daya 35.0 N.

14.4 S

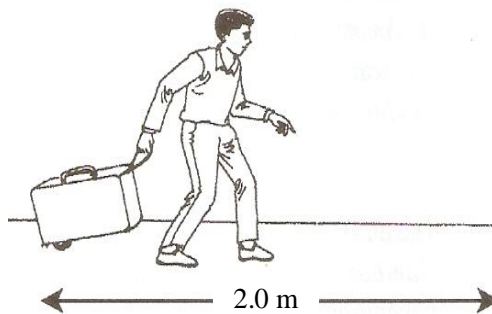


Diagram 15
Rajah 15

Calculate the work done.

Hitungkan kerja yang dilakukan.

A 33 J

C 37 J

B 70 J

D 235 J

What is the effect of force shown in Diagram 17?
Apakah kesan daya yang ditunjukkan dalam Rajah 17?

- A Force can stop a moving object
Daya boleh menghentikan pergerakan objek
- B Force can change the shape of an object
Daya boleh mengubah bentuk objek
- C Force can change the speed of a moving object
Daya boleh mengubah kelajuan pergerakan objek
- D Force can change the weight of an object
Daya boleh mengubah berat objek

25 Diagram 18 shows an invertebrate.
Rajah 18 menunjukkan suatu invertebrat.

15.1 R



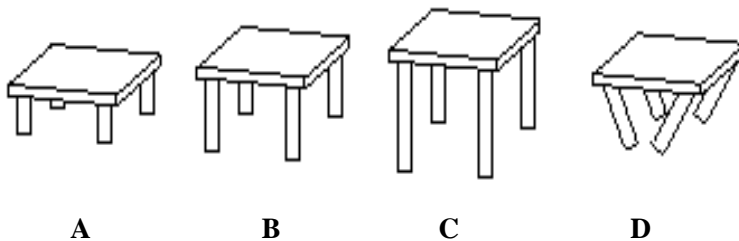
Diagram 18
Rajah 18

Which of the following animal has the same support system as the organism shown in Diagram 18?
Antara haiwan berikut, manakah mempunyai sistem sokongan yang sama seperti organisma dalam Rajah 18?

- A Beetle
Kumbang
- B Crab
Ketam
- C Spider
Labah-labah
- D Leech
Lintah

26 Which of the following models is the most stable?
Antara model berikut, manakah yang paling stabil?

16.1 R



- 27 Diagram 19 shows two devices that use the principle of lever.
Rajah 19 menunjukkan dua alat yang menggunakan prinsip tuas.

17.1 T

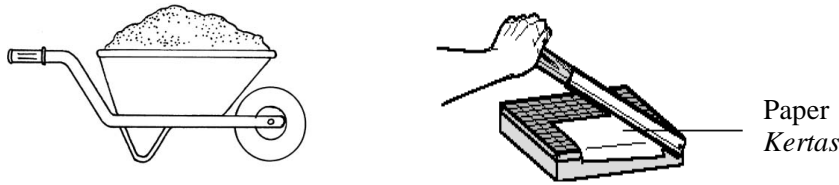


Diagram 19
Rajah 19

Which principle of lever is **correct** for these devices?
Prinsip tuas manakah yang betul berkaitan alat-alat ini?

- I The load and effort act in the same direction
Beban dan daya bertindak dalam arah yang sama
 - II The devices are classified as second class lever
Alat-alat dikelaskan sebagai tuas kelas kedua
 - III A little effort can overcome a large load
Daya yang kecil boleh mengatasi beban yang besar
 - IV The effort is between the fulcrum and the load
Daya terletak di antara fulkrum dan beban
- A I and II
I dan II
- B I and III
I dan III
- C II and III
II dan III
- D III and IV
III dan IV

- 28 Diagram 20 shows gaseous exchange between the alveolus and the blood capillary.
Rajah 20 menunjukkan pertukaran gas di antara alveolus dan kapilari darah.

18.2 R

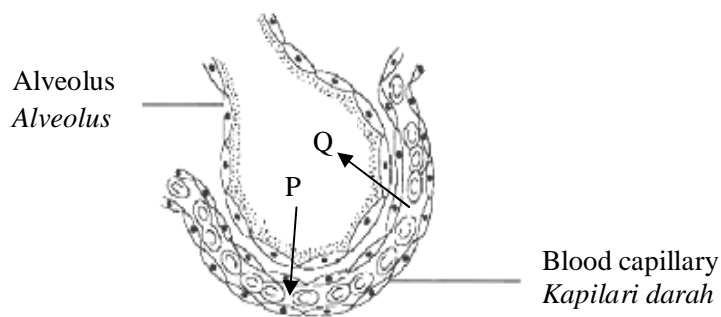


Diagram 20
Rajah 20

Which of the following represents P and Q?
 Antara berikut, manakah mewakili P dan Q?

	P	Q
A	Oxygen <i>Oksigen</i>	Water vapour <i>Wap air</i>
B	Carbon dioxide <i>Karbon dioksida</i>	Oxygen <i>Oksigen</i>
C	Nitrogen <i>Nitrogen</i>	Oxygen <i>Oksigen</i>
D	Oxygen <i>Oksigen</i>	Carbon dioxide <i>Karbon dioksida</i>

29 Which of the following are matched correctly?
 Antara berikut, yang manakah dipadankan dengan betul?

19.2 S

	Blood Constituent <i>Komponen darah</i>	Function <i>Fungsi</i>
A	Red blood cells <i>Sel darah merah</i>	Help the blood to clot <i>Membantu pembekuan darah</i>
B	White blood cells <i>Sel darah putih</i>	Fight off diseases <i>Melawan penyakit</i>
C	Plasma <i>Plasma</i>	Transport oxygen <i>Pengangkutan oksigen</i>
D	Platelets <i>Platlet</i>	Transport dissolved substances <i>Mengangkut bahan terlarut</i>

30 Diagram 21 shows a structure in the leaf of a plant.
 Rajah 21 menunjukkan struktur yang terdapat dalam daun tumbuhan.

19.3 R

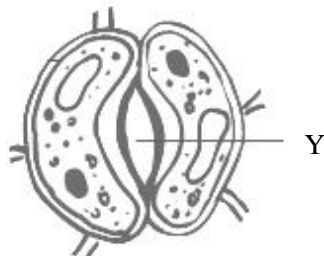


Diagram 21
 Rajah 21

What is the structure represented by Y?
Apakah struktur yang diwakili oleh Y?

- | | |
|--------------------------------|--|
| A Xylem
<i>Xilem</i> | C Phloem
<i>Floem</i> |
| B Stoma
<i>Stoma</i> | D Guard cell
<i>Sel pengawal</i> |

31 Which of the following is an excretory organ?
Antara berikut yang manakah merupakan organ perkumuhan?

20.1 R

- | | |
|----------------------------------|----------------------------------|
| A Heart
<i>Jantung</i> | C Stomach
<i>Perut</i> |
| B Liver
<i>Hati</i> | D Skin
<i>Kulit</i> |

32 Information below shows the sequence of dialysis treatment process by using dialysis machine for kidney failure patients.

Maklumat di bawah menunjukkan urutan rawatan dialisis menggunakan mesin dialisis bagi pesakit kerosakan ginjal.

20.2 T

P- The clean blood is then returned into the patient's vein
Darah bersih kemudian dikembalikan ke vena pesakit

Q- The waste products pass through the membrane into dialysis fluid
Bahan buangan melepasi membran ke dalam bendalir dialisis

R- The blood drawn from a patient's artery
Darah dialir keluar dari arteri pesakit

S- The blood flows through the tubes in the dialysis machine
Darah mengalir melalui tiub dalam mesin dialisis

Which sequence shows the correct steps of the dialysis treatment?
Urutan manakah yang menunjukkan langkah yang betul bagi rawatan dialisis?

- | | |
|---------------------|---------------------|
| A R, S, Q, P | C R, Q, S, P |
| B P, S, Q, R | D P, Q, S, R |

- 33 Diagram 22 shows a calendar marked with the first day of menstruation for a woman.
Rajah 22 menunjukkan satu kalendar yang ditandakan dengan hari pertama haid seorang wanita.

JULY 2013						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

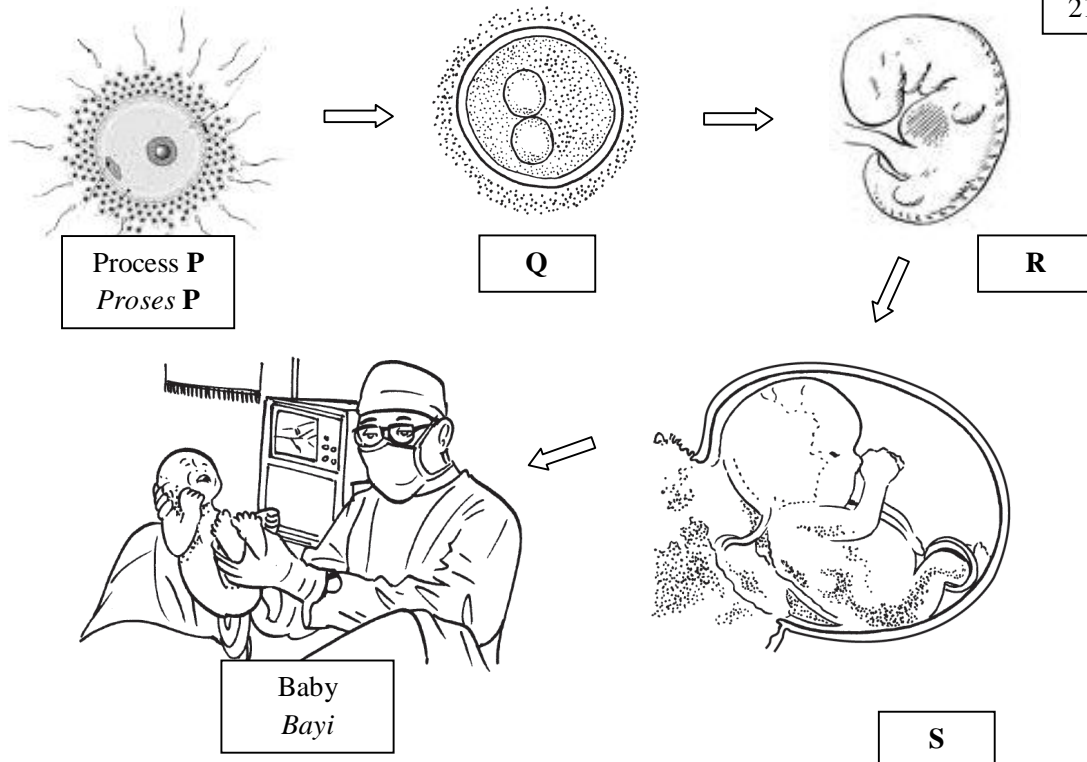
21.4 S

Diagram 22
Rajah 22

When is the likely period of her ovulation?
Bilakah waktu yang mungkin bagi ovulasinya?

- A 7 – 9 August
 7 – 9 Ogos
- B 12 – 14 July
 12 – 14 Julai
- C 16 – 18 July
 16 – 18 Julai
- D 20 – 22 July
 20 – 22 Julai

- 34 The flow chart below shows the development from process P up to when a baby is formed.
Carta alir di bawah menunjukkan perkembangan dari proses P sehingga terbentuknya bayi.



What are **P**, **Q**, **R** and **S**?
 Apakah **P**, **Q**, **R** dan **S**?

	P	Q	R	S
A	Implantation <i>Penempelan</i>	Embryo <i>Embrio</i>	Foetus <i>Fetus</i>	Baby <i>Bayi</i>
B	Fertilisation <i>Persenyawaan</i>	Zygote <i>Zigot</i>	Embryo <i>Embrio</i>	Foetus <i>Fetus</i>
C	Ovulation <i>Pengovulan</i>	Zygote <i>Zigot</i>	Embryo <i>Embrio</i>	Foetus <i>Fetus</i>
D	Fertilisation <i>Persenyawaan</i>	Zygote <i>Zigot</i>	Embryo <i>Embrio</i>	Baby <i>Bayi</i>

- 35 Diagram 23 shows the transfer of pollens that takes places in flowering plants.
 Rajah 23 menunjukkan pemindahan debunga yang berlaku dalam tumbuhan berbunga.

21.9 R

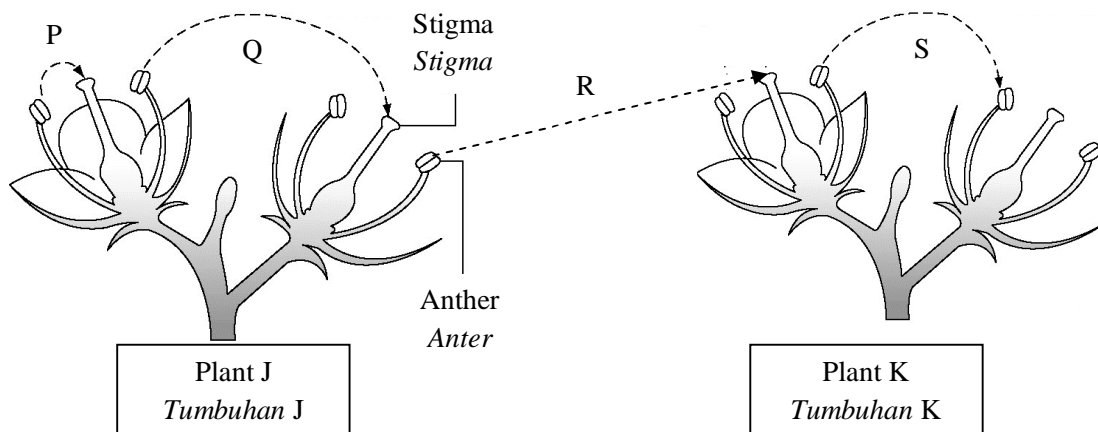


Diagram 23
 Rajah 23

Self-pollination is shown by
 Pendebungaan sendiri ditunjukkan oleh

- A** P only
 P sahaja
- B** P and S
 P dan S
- C** P and Q
 P dan Q
- D** Q and R
 Q dan R

- 36 Diagram 24 shows the growth curve for male and female based on body weight.
Rajah 24 menunjukkan lengkung pertumbuhan bagi lelaki dan perempuan berdasarkan berat badan.

22.1 T

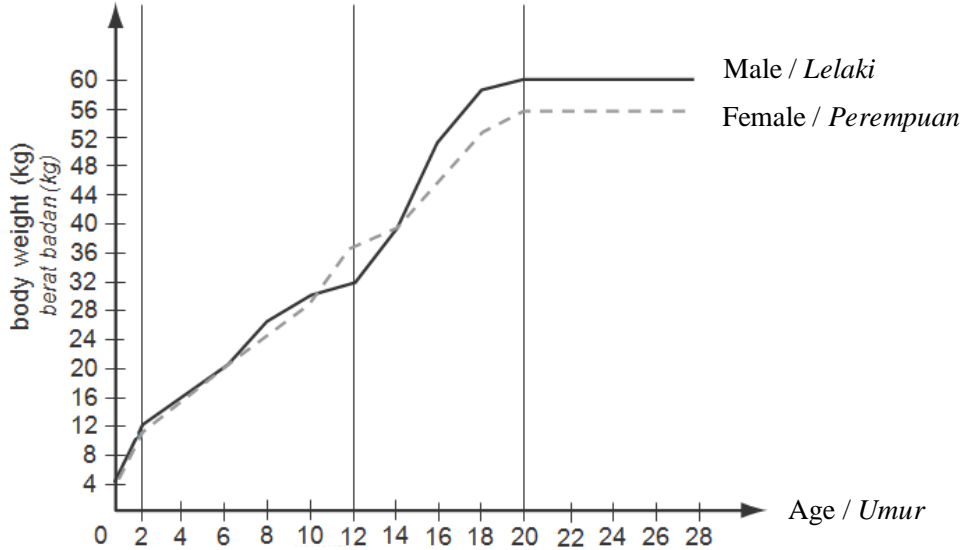


Diagram 24
Rajah 24

What is the weight of male and female at 12 years of age?
Berapakah berat lelaki dan perempuan pada umur 12 tahun?

	Body weight (kg) <i>Berat badan (kg)</i>	
	Male <i>Lelaki</i>	Female <i>Perempuan</i>
A	12	4
B	12	12
C	32	37
D	60	56

- 37 Which of the following word equation is correct?
Antara berikut, persamaan perkataan yang manakah betul?

23.2 S

- A Iron + oxygen $\xrightarrow{\text{heated}}$ Iron oxide
Besi + oksigen $\xrightarrow{\text{panaskan}}$ Besi oksida
- B Magnesium + sulphur $\xrightarrow{\text{heated}}$ Magnesium oxide
Magnesium + sulfur $\xrightarrow{\text{panaskan}}$ Magnesium oksida
- C Calcium carbonate $\xrightarrow{\text{heated}}$ Calcium + carbon dioxide
Kalsium karbonat $\xrightarrow{\text{panaskan}}$ Kalsium + karbon dioksida
- D Plumbum sulphide + oxygen $\xrightarrow{\text{heated}}$ Plumbum + sulphur dioxide
Plumbum sulfida + oksigen $\xrightarrow{\text{panaskan}}$ Plumbum + sulfur dioksida

- 38 Diagram 25 shows an electrical circuit. Both bulbs are identical.
Rajah 25 menunjukkan suatu litar elektrik. Kedua-dua mentol adalah serupa.

24.7 T

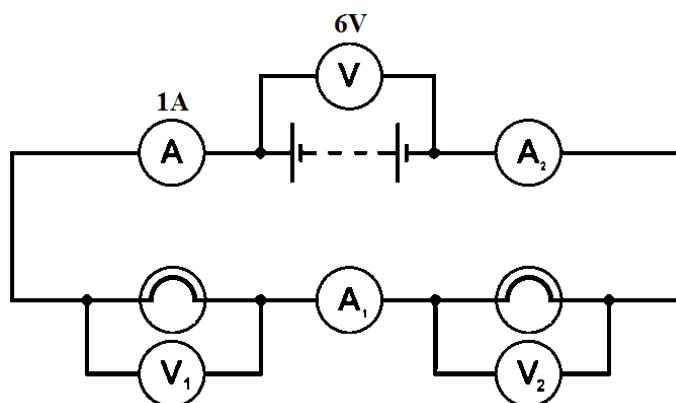


Diagram 25
Rajah 25

What is the correct reading on each of the meters A_1 , A_2 , V_1 and V_2 ?
Apakah bacaan yang betul bagi meter-meter A_1 , A_2 , V_1 dan V_2 ?

	A_1	A_2	V_1	V_2
A	0.5A	0.5A	0.5V	0.5V
B	2A	6A	3V	6V
C	1A	1A	3V	3V
D	1A	2A	12V	12V

- 39 Diagram 26 shows a transformer.
Rajah 26 menunjukkan satu transformer.

25.2 R

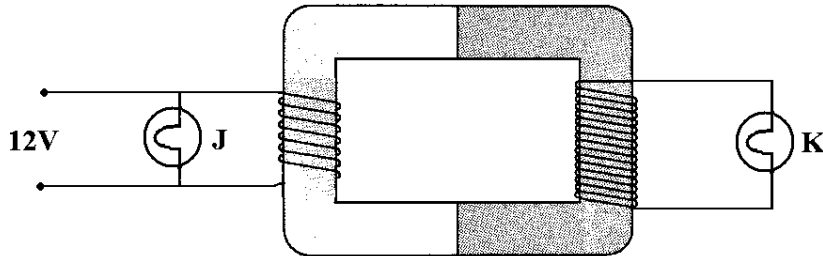


Diagram 26
Rajah 26

Which of the following statements is true?
Antara pernyataan berikut, yang manakah benar?

- A Bulb K is brighter than bulb J
Mentol K lebih terang daripada mentol J
- B Bulb J and K are equally bright
Mentol J dan K sama terang
- C Bulb J is brighter than bulb K
Mentol J lebih terang daripada mentol K
- D This is a step-down transformer
Ini adalah transformer injak turun
- 40 Which activity on the Sun's surface can affect satellite, radio, television and telecommunications on the Earth's surface?
Aktiviti di permukaan Matahari manakah dapat memberi kesan kepada satelit, radio, televisyen dan telekomunikasi di permukaan Bumi.

26.1 R

- A Solar winds
Angin suria
- B Solar flares
Nyala suria
- C Sun spots
Tompok matahari
- D Prominences
Prominen

END OF QUESTION PAPER
KERTAS SOALAN TAMAT

INFORMATION FOR CANDIDATES
MAKLUMAT UNTUK CALON

1. This question paper consists of **40** questions.

*Kertas soalan ini mengandungi **40** soalan.*

2. Answer **all** questions.

*Jawab **semua** soalan.*

3. Each question is followed by four alternative answers, **A, B, C** and **D**. For each question, choose **one** answer only. Blacken your answer on the objective answer sheet provided.

*Tiap-tiap soalan diikuti oleh empat pilihan jawapan, iaitu **A, B, C** dan **D**. Bagi setiap soalan, pilih **satu** jawapan sahaja. Hitamkan jawapan anda pada kertas jawapan objektif yang disediakan.*

4. If you wish to change your answer, erase the blackened mark that you have made. Then blacken the new answer.

Jika anda hendak menukar jawapan, padamkan tanda yang telah dibuat. Kemudian hitamkan jawapan yang baru.

5. The diagrams in the questions provided are not drawn to scale unless stated.

Rajah yang mengiringi soalan tidak dilukis mengikut skala kecuali dinyatakan.

6. You may use a scientific calculator.

Anda dibenarkan menggunakan kalkulator saintifik.

SET A
SAINS



55/1

1 jam

MAJLIS PENGETUA SEKOLAH MALAYSIA (MPSM)

NEGERI KEDAH DARUL AMAN

SAINS

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.*

INFORMATION FOR CANDIDATES

MAKLUMAT UNTUK CALON

1. This question paper consists of **40** questions.
Kertas soalan ini mengandungi 40 soalan
2. Answer **all** questions
*Jawab **semua** soalan.*
3. You may use a non-programmable scientific calculator.
Anda dibenarkan menggunakan kalkulator saintifik yang tidak boleh diprogramkan.

Kertas soalan ini mengandungi 25 halaman bercetak.

