

SULIT
55/1
SCIENCE
Kertas 1
Ogos 2010
1 JAM



MAJLIS PENGETUA SEKOLAH MALAYSIA
NEGERI PAHANG

PEPERIKSAAN PERCUBAAN PMR TAHUN 2010

SCIENCE

Tingkatan 3

Kertas 1

Satu Jam

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU

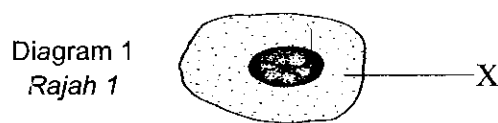
- 1. Kertas soalan ini adalah dalam dwibahasa.*
- 2. Soalan dalam bahasa Inggeris mendahului soalan yang sepadan dalam bahasa Melayu.*
- 3. Calon dikehendaki membaca maklumat di halaman belakang kertas soalan ini.*

Kertas soalan ini mengandungi 19 halaman bercetak dan 1 halaman tidak bercetak

- 1 A student needs to measure 18.0 cm³ of hydrochloric acid accurately.
Which apparatus should the student use?
*Seorang pelajar perlu mengukur 18.0 cm³ acid hidroklorik dengan tepat.
Apakah peralatan yang perlu digunakan oleh pelajar tersebut?*

- | | | | |
|---|---------------------------|---|--|
| A | A beaker
<i>Bikar</i> | C | A burette
<i>Buret</i> |
| B | A pipette
<i>Pipet</i> | D | A measuring cylinder
<i>Silinder penyukat</i> |

- 2 Diagram 1 shows an animal cell.
Rajah 1 menunjukkan sel haiwan.



The part of the cell labeled X is ...
Bahagian bertlabel X ialah ...

- | | | | |
|---|--------------------------------|---|---------------------------------|
| A | nucleus
<i>nukleus</i> | C | chloroplast
<i>Kloroplas</i> |
| B | cytoplasm
<i>sitoplasma</i> | D | vacuole
<i>vakuol</i> |
- 3 Diagram 2 shows five types of microorganism.
Rajah 2 menunjukkan lima jenis mikroorganism.

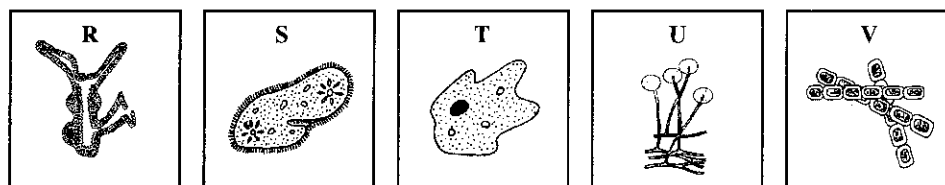


Diagram 2
Rajah 2

Which of the following are multicellular microorganism?
Antara yang berikut, yang manakah mikroorganisma multisel?

- | | | | |
|---|---------------------------------|---|---------------------------------|
| A | R, S and T
<i>R, S dan T</i> | C | T, U and V
<i>T, U dan V</i> |
| B | R, U and V
<i>R, U dan V</i> | D | R, T and U
<i>R, T dan U</i> |

- 4 Diagram 3 shows the arrangement of particles in one state of the matter.
Rajah 3 menunjukkan susunan zarah-zarah dalam satu keadaan jirim.

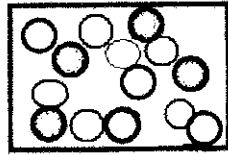
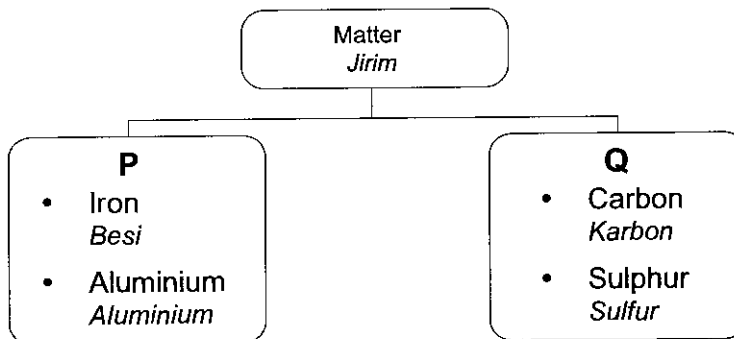


Diagram 3
Rajah 3

Which of the following shows the **correct** statement of the particles ?
Antara berikut yang manakah menunjukkan keadaan yang betul tentang zarah-zarah tersebut?

- A Are fixed in position and do not move at all
Tetap pada kedudukan dan tidak bergerak
- B Constantly move about randomly in all directions
Bergerak berterusan secara rawak dalam semua arah
- C Have no orderly arrangement and are able to move freely
Tiada susunan yang teratur dan boleh bergerak dengan bebas
- D Are arranged closely together and vibrate about a fixed position
Disusun secara rapat dan bergetar pada kedudukannya
- 5 The chart shows a way of classifying matter.
Carta menunjukkan pengkelasan jirim.

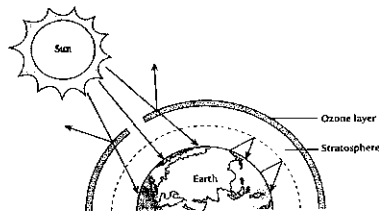


Which of the following substances are other examples of P and Q?
Antara berikut, yang manakah merupakan contoh lain bagi P dan Q?

	P	Q
A	Iodine Iodin	Copper Kuprum
B	Sulphur Sulfur	Silver Perak
C	Mercury Merkuri	Gold Emas
D	Tin Timah	Silicon Silikon

- 6 Diagram 4 shows how the ozone layer provides protection to the Earth from ultraviolet rays.
Rajah 4 menunjukkan bagaimana lapisan ozon menyediakan perlindungan kepada Bumi daripada sinaran Ultraungu.

Diagram 4
Rajah 4



What causes the thinning of the ozone layer?
Apakah yang menyebabkan penipisan lapisan ozon?

- | | |
|---|--|
| A Chlorine gas
Gas klorin | C Radioactive radiation
Sinaran radioaktif |
| B Hydrogen sulphide
Hydrogen sulfida | D Chlorofluorocarbon (CFC)
Kloroflorokarbon |
- 7 Diagram 5 shows an experiment.
Rajah 5 menunjukkan satu eksperimen.

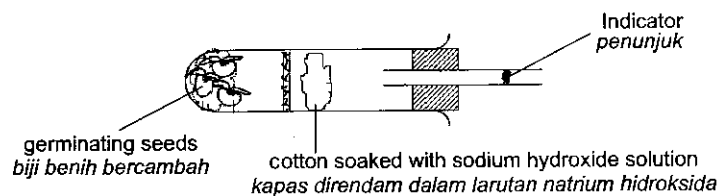


Diagram 5
Rajah 5

After 3 hours, the indicator moves inwards towards the test tube because the seeds...
Selepas 3 jam, penunjuk bergerak ke arah dalam tabung uji kerana biji benih ...

- | |
|---|
| A use up oxygen during respiration
menggunakan oksigen semasa respirasi |
| B release heat during respiration
membebaskan haba semasa respirasi |
| C use up carbon dioxide during respiration
menggunakan karbon dioksida semasa respirasi |
| D release carbon dioxide during respiration
membebaskan karbon dioksida semasa respirasi |

- 8 Solar, biomass, geothermal, wind and hydropower energy are all renewable sources of energy. They are called renewable because they ...
Tenaga solar, tenaga biomas, tenaga geotermal, tenaga angin dan tenaga kuasahidro adalah sumber-sumber boleh diperbaharui. Semua tersebut adalah tenaga boleh diperbaharui kerana ...
- A are clean and free to use
bersih dan bebas digunakan
- B do not produce air pollution
tidak menghasilkan pencemaran
- C can be converted directly into heat and electricity
boleh ditukarkan secara terus kepada haba dan elektrik
- D can be replenished by nature in a short period of time
boleh ditambah secara semulajadi dalam jangkamasa yang pendek
- 9 Which of the following is the main source of heat energy?
Antara berikut, manakah punca tenaga utama bagi tenaga haba?
- A The Sun
Matahari
- B Electricity
Tenaga elektrik
- C Nuclear reaction
Tindakbalas nuklear
- D Burning of fossil fuels
Pembakaran bahan bakar
- 10 Diagram 6 shows an experiment to investigate the transfer of heat.
Rajah 6 menunjukkan satu eksperimen mengkaji pemindahan haba.

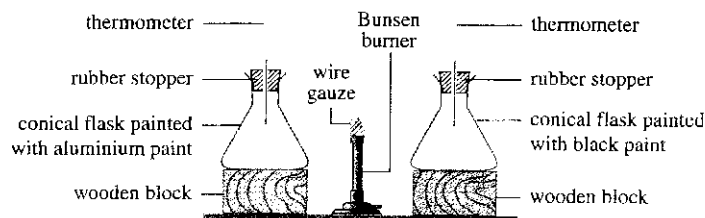


Diagram 6
 Rajah 6

- Which properties of a white and shiny surface and a black dull surface are correct?
Antara yang berikut, manakah yang betul tentang ciri-ciri permukaan putih dan berkilat dengan permukaan hitam dan pudar?

	White and shiny <i>Permukaan putih dan berkilat</i>	Black and dull <i>Permukaan hitam dan pudar</i>
A	A good heat reflector <i>Pemantul haba yang baik</i>	A good heat absorber <i>Penyerap haba yang baik</i>
B	A bad heat reflector <i>Pemantul haba yang lemah</i>	A good heat absorber <i>Penyerap haba yang baik</i>
C	A good heat reflector <i>Pemantul haba yang baik</i>	A bad heat absorber <i>Penyerap haba yang lemah</i>
D	A good heat radiator <i>Pemancar haba yang baik</i>	A good heat absorber <i>Penyerap haba yang baik</i>

- 11 Diagram 7 shows a cross section through the human skin.
Rajah 7 menunjukkan keratan rentas melalui kulit manusia.

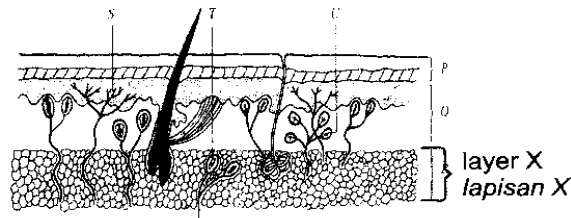


Diagram 7
Rajah 7

Which of the following receptors are found in layer X?
Antara reseptor yang berikut, manakah terdapat di lapisan X?

- | | | | |
|---|---|---|---|
| A | Pain receptors
<i>Reseptor kesakitan</i> | C | Pressure receptors
<i>Reseptor tekanan</i> |
| B | Touch receptors
<i>Reseptor sentuhan</i> | D | Heat receptors
<i>Receptor kepanasan</i> |
- 12 Diagram 8 shows a defect of vision.
Rajah 8 menunjukkan sejenis kecacatan penglihatan.

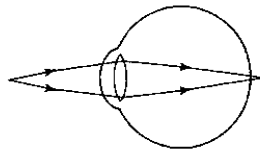


Diagram 8
Rajah 8

Which of the following is the cause of this defect of vision?
Antara yang berikut, manakah yang merupakan penyebab bagi kecacatan ini?

- | | |
|---|--|
| A | The cornea is not even
<i>Kornea tidak sekata</i> |
| B | The eyeball is too long
<i>Bola mata terlalu panjang</i> |
| C | The eye lens is too thin
<i>Kanta mata terlalu nipis</i> |
| D | The ciliary muscle lose the ability to contract and relax
<i>Otot silia hilang keupayaan untuk mengecut dan mengendur</i> |

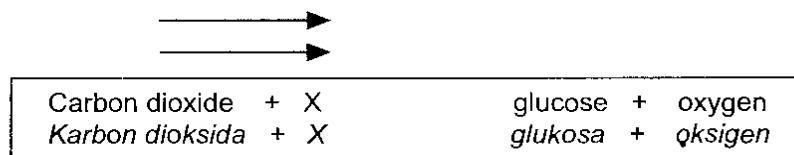
- 13 Table 1 shows the result of food tests carried out on food X.
Jadual 1 menunjukkan keputusan ujian makanan yang dijalankan ke atas makanan X

Food Test <i>Ujian makanan</i>	Observation <i>Pemerhatian</i>
Million's test <i>Ujian Milon</i>	A brick-red precipitate is form <i>Mendakan merah bata terbentuk</i>
Iodine test <i>Ujian iodine</i>	The solution turns blue black <i>Larutan bertukar biru kehitaman</i>
Benedict's test <i>Ujian Benedict</i>	There is no change <i>Tiada perubahan</i>

Table 1
Jadual 1

Food X contains
Makanan X mengandungi

- A fat and protein
lemak dan protein
- B glucose dan fat
glukosa dan lemak
- C protein and starch
protein dan kanji
- D starch and glucose
kanji dan glukosa
- 14 What is the function of bile produced in the liver?
Apakah fungsi hempedu yang dihasilkan dalam hati?
- A To kill the bacteria in food
Untuk membunuh bacteria di dalam makanan
- B To promote the process of peristalsis
Untuk meransangkan proses peristalsis
- C To stop the secretion of juices
Untuk menghentikan rembesan jus
- D To emulsify fats into small droplets
Untuk membaurkan lemak menjadi titisan-titisan kecil
- 15 The word equation below represents the process of photosynthesis.
Persamaan dalam perkataan dibawah mewakili proses fotosintesis.



X is most probably
Kemungkinan besar X adalah

- A Heat
haba
- B Water
Air
- C Nitrogen
Nitrogen
- D Chlorophyll
Klorofil

- 16 Table 2 shows the body covering of three animals, P,Q and R.
 Jadual 2 menunjukkan liputan badan bagi tiga haiwan, P, Q dan R.

Animal Haiwan	Body covering Liputan badan
P	Scales/sisik
Q	Feathers/Bulu pelepah
R	Moist skin/Kulit lembap

Table 2
Jadual 2

What groups of animals are P,Q and R?
 Apakah kumpulan yang betul bagi haiwan P,Q dan R?

	P	Q	R
A	Fish <i>Ikan</i>	Bird <i>Burung</i>	Amphibian <i>Amfibia</i>
B	Fish <i>Ikan</i>	Bird <i>Burung</i>	Reptile <i>Reptilia</i>
C	Reptile <i>Reptilia</i>	Mammal <i>Mamalia</i>	Fish <i>Ikan</i>
D	Reptile <i>Reptilia</i>	Mammal <i>Mamalia</i>	Amphibian <i>Amfibia</i>

17

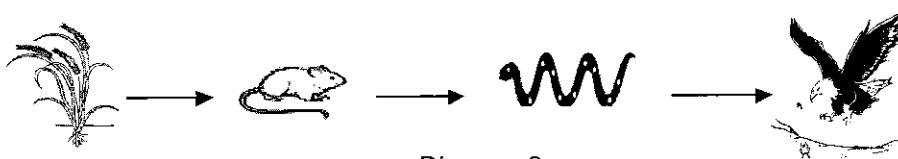


Diagram 9
Rajah 9

According to the food chain in diagram 9, which of the following statements is true if the number of the snake is decreased?
 Berdasarkan rantai makanan di Rajah 9, antara pernyataan berikut, yang manakah benar sekiranya bilangan ular berkurangan?

- A The number of paddy plants will decrease
Bilangan padi akan berkurangan
- B The number of rat will decrease
Bilangan tikus akan berkurangan
- C The number of paddy plants will increase
Bilangan padi akan bertambah
- D The number of eagle will increase
Bilangan helang akan bertambah

18 Which of the following properties of water is correct?
Antara yang berikut, manakah yang benar tentang sifat-sifat air?

- A Water freezes at a temperature which is higher than 0°C
Air membeku pada suhu melebihi 0°C
- B Water is colourless,ourless and tasteless liquid
Air tidak berwarna, tidak berbau dan tiada rasa
- C Water boils at a temperature which is lower than 100°C
Air mendidih pada suhu kurang daripada 100°C
- D Water turns anhydrous copper sulphate blue
Air menukarkan kuprum sulfat kontang menjadi biru

19



Diagram 10
Rajah 10

Six spatula of salt are added to a glass of water and the water is stirred. It is observed that some of the salt cannot dissolved. What type of the solution is produced?
Enam spatula garam ditambahkan ke dalam segelas air dan dikacau. Didapati sebahagian garam tidak dapat dilarutkan. Apakah jenis larutan yang terhasil?

- | | |
|---|---|
| A Clear solution
<i>Larutan jernih</i> | C Saturated solution
<i>Larutan tepu</i> |
| B Dilute solution
<i>Larutan cair</i> | D Concentrated solution
<i>Larutan pekat</i> |

20

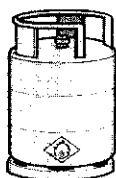


Diagram 11
Rajah 11

Air pressure in a closed container is due to the
Tekanan udara dalam bekas yang tertutup adalah disebabkan oleh

- A Collision of air particles with one another
Perlanggaran zarah-zarah udara di antara satu dengan yang lain
- B Presence of tiny particle in the container
Kehadiran zarah-zarah yang kecil dalam bekas
- C Random movement of air particles in the container
Pergerakan zarah-zarah udara secara rawak di dalam bekas
- D The air particles is hitting on the wall of the container
Zarah-zarah udara menghentam dinding bekas

- 21 In which of the following conditions, force is produced?
Antara keadaan berikut, yang manakah daya dihasilkan?
- A Holding a spring
Memegang spring
 - B Putting a nail on a table
Meletakkan paku di atas meja
 - C Pulling back the string of a bow
Menarik tali busur
 - D Touching a static car at a roadside
Menyentuh kereta pegun di tepi jalan

22

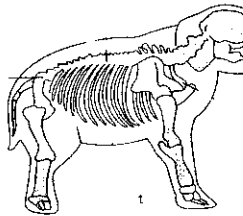


Diagram 12
Rajah 12

Which of the following is **not** the function of the endoskeleton of an elephant?
Antara berikut, yang manakah bukan fungsi rangka bagi seekor gajah?

- A To support the weight of the body
Untuk menyokong berat badannya
- B To support the body and give it shape
Untuk menyokong dan memberi bentuk kepada badannya
- C To protect the internal organs of the body
Untuk melindungi organ dalaman badan
- D To help it float in water
Untuk membantunya terapung di dalam air

23

A plate is more stable than a glass
Pinggan lebih stabil daripada gelas

Which of the following explains the statement above?
Antara berikut, yang manakah menerangkan pernyataan di atas?

- A A plate is lighter than a glass
Pinggan lebih ringan daripada gelas
- B A plate has a bigger base area than a glass
Pinggan mempunyai luas tapak yang lebih besar daripada gelas
- C A plate has a higher centre of gravity than a glass
Pinggan mempunyai pusat graviti yang lebih tinggi daripada gelas
- D A plate has a smaller base area than a glass
Pinggan mempunyai luas tapak yang lebih kecil berbanding gelas.

- 24 Diagram 13 below shows a type of simple machine that simplify our work.
Rajah 13 di bawah menunjukkan sejenis mesin ringkas yang memudahkan kerja.

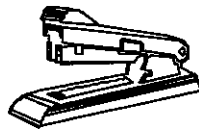


Diagram 13
Rajah 13

Which of the following statements is true?
Pernyataan yang manakah benar?

- A The fulcrum is situated between the effort and the load
Fulkrum terletak antara daya dan beban
- B The load is situated between the effort and the fulcrum
Beban terletak antara daya dan fulkrum
- C The effort is situated between the load and the fulcrum
Daya terletak antara beban dan fulkrum
- D The distance of the effort from the fulcrum is similar to the distance of the load from the fulcrum
Jarak antara daya dan fulkrum adalah sama dengan jarak antara beban dan fulkrum
- 25 The following are the stages in the transport of oxygen in human body,
Berikut ialah peringkat-peringkat dalam pengangkutan oksigen dalam badan manusia.

P - oxygen diffuses through the capillary wall
oksigen meresap melalui dinding kapilari

Q - oxyhaemoglobin breaks down
oksihemoglobin terurai

R - oxygen diffuses through the alveolar wall
oksigen meresap melalui dinding alveolus

S - oxygen combines with haemoglobin
oksigen berpadu dengan hemoglobin

Which of the following shows the correct sequence of the transportation of oxygen in human body?

Berikut yang manakah benar tentang pengangkutan oksigen dalam badan manusia?

- A R → P → Q → S C P → S → Q → P
- B R → S → Q → P D P → S → Q → P

- 26 Diagram 14 shows diffusion of oxygen into the body cells.
Rajah 14 menunjukkan peresapan oksigen ke dalam sel-sel badan.

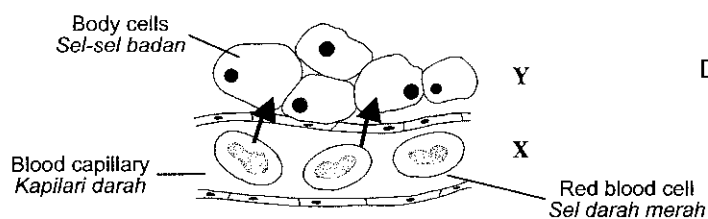


Diagram 14
Rajah 14

Which of the following is the correct concentration of oxygen at X and Y?
 Mana antara berikut benar tentang kepekatan oksigen di X dan Y?

	X	Y
A	High Tinggi	Low Rendah
B	Low Rendah	High Tinggi
C	High Tinggi	High Tinggi
D	Low Rendah	Low Rendah

27 Diagram 15 shows two components of blood.
 Rajah 15 menunjukkan dua komponen darah.



P



Q

Diagram 15
 Rajah 15

What are the functions of component P and Q?
 Apakah fungsi komponen P dan Q?

	P	Q
A	Fight infections Melawan jangkitan	Helps in blood clotting Membantu dalam pembekuan darah
B	Transport oxygen Mengangkut oksigen	Fight infections Melawan penyakit
C	Fight infections Melawan penyakit	Transport oxygen Mengangkut oksigen
D	Transport hormone Mengangkut hormon	Transport waste product Mengangkut produk perkumuhan

28 The information below shows how complex products of excretion are removed from a plant.
 Maklumat di bawah menunjukkan bagaimana produk kompleks perkumuhan disingkirkan daripada tumbuhan.

The complex products are stored in the cells of certain part of plant until these parts fall and decompose.
 Produk kompleks disimpan di dalam sel pada bahagian tertentu tumbuhan sehingga bahagian tersebut jatuh dan terurai.

The parts of the plant that store these complex products include
 Bahagian tumbuhan yang menyimpan produk kompleks termasuk

- | | | |
|------------------|-------------------|--------------------|
| I Stem
Batang | II Leaves
Daun | III Fruits
Buah |
| A I dan II | B I dan III | C II dan III |
| | | D III only |

- 29 Which of the following are beneficial and harmful excretory products
 Antara berikut, manakah produk perkumuhan yang berfaedah dan produk perkumuhan yang berbahaya?

	Beneficial Berfaedah	Harmful Berbahaya
A	Nicotine Nikotin	Tannin Tanin
B	Opium Candu	Latex Lateks
C	Heroin Heroin	Resin Resin
D	Latex Lateks	Morphine Morfin

- 30 Diagram 16 shows the menstrual cycle of a woman. At which phase, A, B, C or D, is fertilisation possible to occur.
 Rajah 16 menunjukkan kitar haid seorang perempuan. Pada fasa manakah, A, B, C atau D, persenyawaan berkemungkinan berlaku?

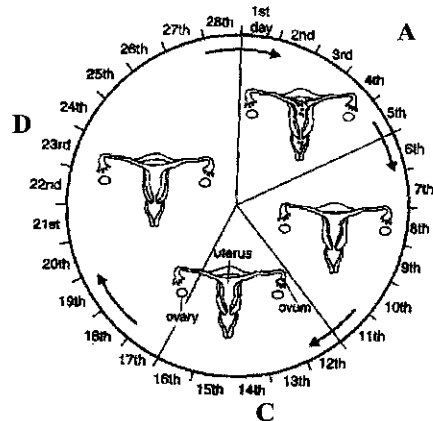


Diagram 16
 Rajah 16

- 31 Diagram 17 shows a graph of human growth curve.
 Rajah 17 menunjukkan lengkung pertumbuhan manusia.

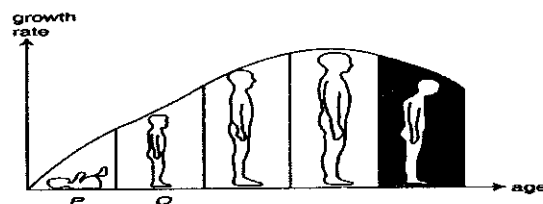


Diagram 17
 Rajah 17

	P	Q
A	Minimal growth Pertumbuhan minima	Negative growth Pertumbuhan negative
B	Slow growth Pertumbuhan perlahan	Minimal growth Pertumbuhan minima
C	Rapid growth Pertumbuhan pesat	Slow growth Pertumbuhan perlahan
D	Negative growth Pertumbuhan negatif	Rapid growth pertumbuhan pesat

- 32 Which of the following minerals exist as compounds?
 Antara mineral berikut, yang manakah wujud sebagai sebatian ?

P	Aluminium oxide Aluminium oksida
Q	Magnetit and clay Magnetit dan tanah liat
R	Carbonates and silicates Karbonat dan silikat

- | | | | |
|---|--------------------------------|---|--------------------------------|
| A | P and Q only
P dan Q sahaja | C | P and R only
P dan R sahaja |
| B | Q and R only
Q dan R sahaja | D | P,Q and R
P,Q dan R sahaja |

- 33 The equation shown below represents the reaction between zinc and oxygen.
 Persamaan di bawah mewakili tindak balas antara zink dan oksigen.

Zinc + oxygen	→	compound P
Zink + oksigen	→	sebatian P

What is compound P that is formed?
 Apakah sebatian P yang terbentuk?

- | | | | |
|---|---------------------------------|---|-------------------------------|
| A | Zinc carbonate
Zink karbonat | C | Zinc oxide
Zink oksida |
| B | Zinc sulphide
Zink sulfida | D | Zinc chloride
Zink klorida |
- 34 Diagram 18 shows a Van De Graaff generator that is connected to a galvanometer.
 Rajah 18 menunjukkan sebuah penjana van De Graaff yang disambungkan ke satu galvanometer.

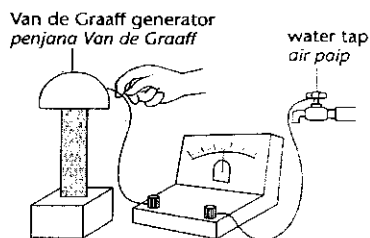


Diagram 18
 Rajah 18

What causes the pointer of the galvanometer to deflect when the generator is switched on?
 Apakah yang menyebabkan penunjuk galvanometer terpesong apabila penjana itu dihidupkan ?

- | | |
|---|---|
| A | The flow of electrons from the generator
Pengaliran elektron dari bumi |
| B | The flow of electrons from earth
Pengaliran elektron dari bumi |
| C | The flow of protons from earth
Pengaliran proton dari bumi |
| D | The flow of neutrons from earth
Pengaliran neutron dari bumi |

- 35 Diagram 19 shows a complete series circuit. Which of the following pairs of electronics components would be suitable to measure the resistance of a resistor in the circuit in Diagram 19 ?

Rajah 19 menunjukkan satu litar bersiri yang lengkap. Antara komponen-komponen elektronik yang berikut, yang manakah sesuai digunakan untuk mengukur rintangan sesuatu perintang dalam litar dalam Rajah 19 ?

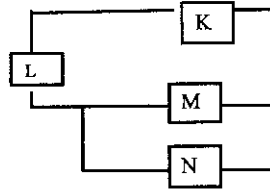
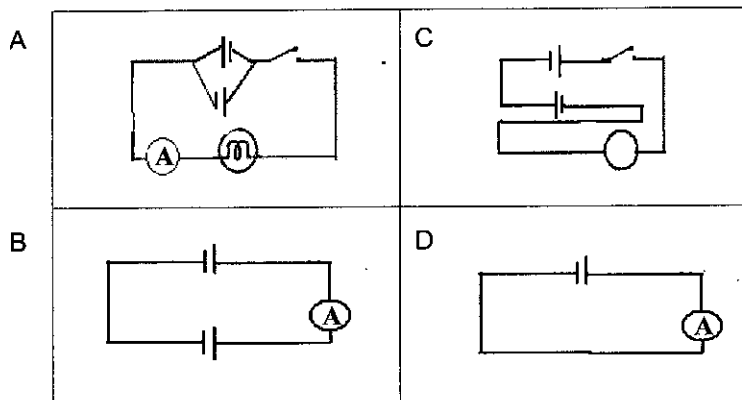


Diagram 19
Rajah 19

	K	L	M	N
A	Dry cell <i>Sel kering</i>	Ammeter <i>Ammeter</i>	Resistor <i>Perintang</i>	Voltmeter <i>Voltmeter</i>
B	Voltmeter <i>Voltmeter</i>	Ammeter <i>Ammeter</i>	Resistor <i>Perintang</i>	Dry cell <i>Sel kering</i>
C	Dry cell <i>Sel kering</i>	Voltmeter <i>Voltmeter</i>	Resistor <i>Perintang</i>	Ammeter <i>Ammeter</i>
D	Ammeter <i>Ammeter</i>	Resistor <i>Perintang</i>	Dry cell <i>Sel kering</i>	Voltmeter <i>Voltmeter</i>

- 36 The ammeter in which circuits shows the highest reading when the circuit is switch on?
Antara litar elektrik yang manakah ammeternya menunjukkan bacaan yang paling tinggi apabila suis dihidupkan?



- 37 The pathway shown below refers to the life cycle of a star. In the pathway shown above, X and Y represent.
*Laluan yang ditunjukkan di bawah merujuk kepada kitar hidup bintang.
 Dalam laluan yang ditunjukkan di bawah, X dan Y mewakili...*

Nebula → Star → X → Supergiant → Y → Neutron star
Nebula → Bintang → X → Super raksasa → Y Bintang Neutron

	X	Y
A	Red giant <i>Raksasa merah</i>	Black hole <i>Lohong hitam</i>
B	Supernova <i>Supernova</i>	Red giant <i>Raksasa merah</i>
C	Black hole <i>Lohong hitam</i>	Supernova <i>Supernova</i>
D	Red giant <i>Raksasa merah</i>	Supernova <i>Supernova</i>

- 38 Diagram 20 shows the system for distribution of electrical power which involves four transformer, K, L, M and N.
Rajah 20 menunjukkan sistem pengagihan tenaga elektrik yang melibatkan empat transformer, K, L, M dan N.

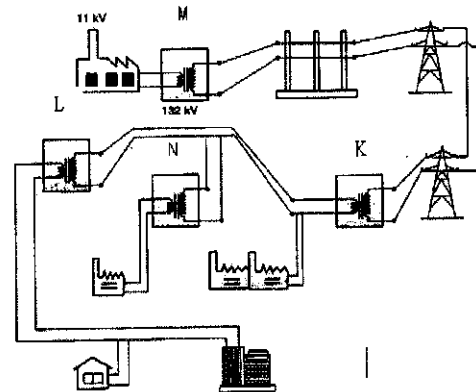


Diagram 20
Rajah 20

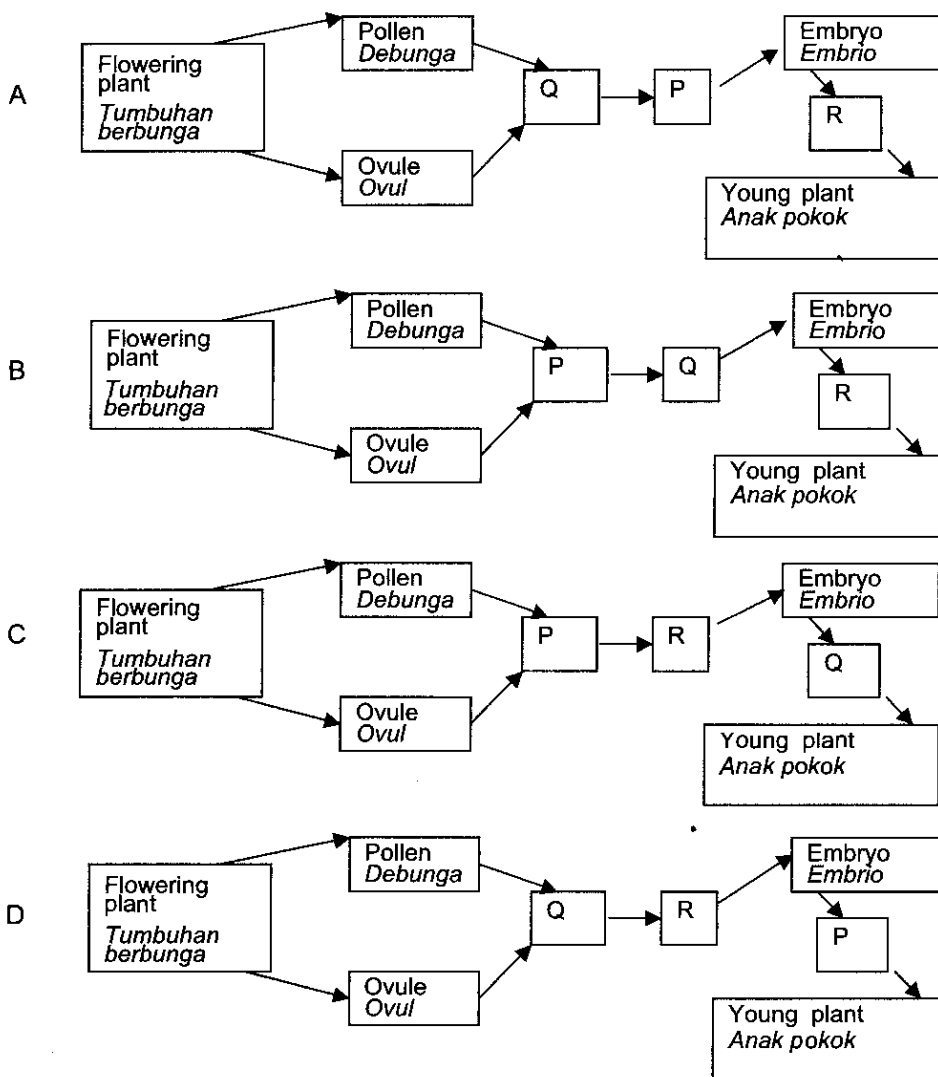
Which of the transformers K, L, M and N are the step-down transformers?
Antara transformer K, L, M dan N yang manakah transformer injak turun ?

- | | | | |
|---|---|---|---|
| A | K, L and N only
<i>K, L dan N sahaja</i> | C | L, M and N only
<i>L, M dan N sahaja</i> |
| B | K, M and N only
<i>K, M dan N sahaja</i> | D | K and L only
<i>K dan L sahaja</i> |

- 39 The following information is about the sexual reproduction of flowering plants.
 Maklumat berikut adalah berkaitan pembiakan seksual bagi tumbuhan berbunga.

P - The formation of zygotes
 Pembentukan zigot
 Q - The fusion of male gametes and female gamete
 Percantuman gamet jantan dan gamet betina
 R - The formation of seedlings
 Pembentukan anak benih

Using the information, choose the correct flow chart of sexual reproduction of flowering plants.
 Dengan menggunakan maklumat yang diberi, pilih carta alir bagi pembiakan seks yang betul.



- 40 Which of the following space probes was launched to the planet, Saturn ?
Antara prob angkasa berikut, yang manakah dilancarkan ke planet Saturn?
- | | | | |
|---|-----------|---|------------|
| A | Luna 3 | C | Pioneer 10 |
| B | Mariner 2 | D | Surveyor 6 |

END OF QUESTION PAPER

**SCHEME OF ANSWER
PAPER ONE
TRIAL EXAMINATION
PENILAIAN MENENGAH RENDAH
2010**

No. of question	Answer
1	C
2	B
3	B
4	C
5	D
6	D
7	A
8	D
9	A
10	A
11	B
12	C
13	C
14	D
15	B
16	A
17	A
18	B
19	C
20	D

No. of question	Answer
21	C
22	D
23	B
24	C
25	B
26	A
27	A
28	C
29	D
30	C
31	C
32	D
33	C
34	B
35	A
36	C
37	D
38	A
39	A
40	B

SULIT**55/2**

SULIT
55/2
SCIENCE
Kertas 2
Ogos 2010
1 1/2 JAM

NAMA :	
KELAS :	



**MAJLIS PENGETUA SEKOLAH MALAYSIA
 NEGERI PAHANG**

PEPERIKSAAN PERCUBAAN PMR TAHUN 2010

SCIENCE

Tingkatan 3

Kertas 2

Satu Jam Tiga Puluh Minit

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU

1. Tulis **nama penuh** dan **tingkatan** 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	60

Kertas soalan ini mengandungi 18 halaman bercetak dan 2 halaman tidak bercetak

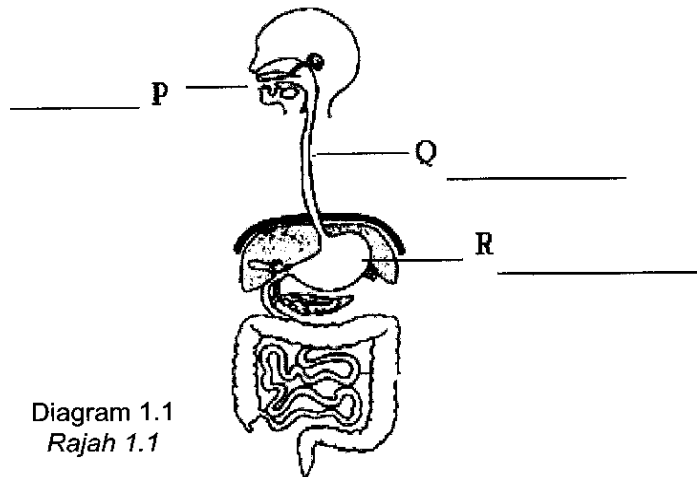
Section A
Bahagian A

[40 marks]
[40 markah]

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

For Examiner's
use
Untuk kegunaan
pemeriksa

1. Diagram 1.1 shows one of the system in the human body
Rajah 1.1 menunjukkan salah satu sistem dalam badan manusia.



- (a) On Diagram 1.1 label structures P,Q, and R using the following words:
Pada Rajah 1.1 labelkan struktur P,Q dan R menggunakan perkataan-perkataan berikut:

Stomach Perut	Oesophagus Esofagus	Mouth Mulut
------------------	------------------------	----------------

[3 marks]
[3 markah]

- (b) Name the system in Diagram 1.1
Namakan sistem dalam Rajah 1.1

[1 mark]
[1 markah]

1(a)

3

1(b)

1

- (c) Name the enzyme produced in P.
Namakan enzim yang dihasilkan di P.

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

- (d) Give one function of the acid produced in R.
Berikan satu fungsi asid yang dihasilkan di R.

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

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 Untuk kegunaan pemeriksa

1(c)

1

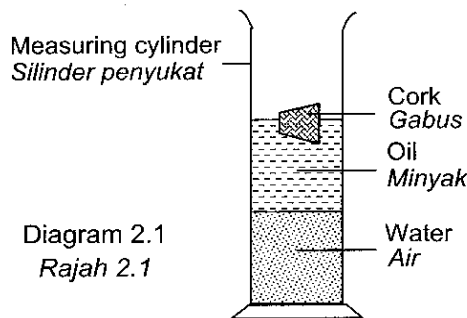
1(d)

1

TOTAL

6

2. Diagram 2.1 shows a measuring cylinder containing three materials with different densities.
Rajah 2.1 menunjukkan sebuah silinder penyukat yang mengandungi tiga bahan dengan ketumpatan berbeza.



- a) Based on Diagram 2.1, arrange the three substances according to their densities in descending order.
Berdasarkan Rajah 2.1, susunkan tiga bahan tersebut berdasarkan ketumpatannya secara menurun.

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

2(a)

1

- b) Why does cork float in water?
 Mengapakah gabus terapung di dalam air?

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

- c) (i) Based on Diagram 2.1, suggest how to sink the cork in the water inside the measuring cylinder.
 Berdasarkan Rajah 2.1, cadangkan bagaimana gabus boleh ditenggelamkan ke dalam air di dalam silinder penyukat tersebut.

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

- (ii) State one reason for your answer in 2(c)(i).
 Berikan satu sebab bagi jawapan anda di 2(c)(i).

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

- d) Which of the following uses the principle of density? Tick (✓) the correct answer in the box given.
 Antara berikut, manakah yang menurut prinsip ketumpatan?
 Tandakan (✓) pada jawapan yang betul dalam kotak yang disediakan..

Hot air balloon Belon udara panas	Car Kereta	Submarine Kapal selam	Bicycle Basikal

[2 marks]
 [2 markah]

For Examiner's use
 Untuk kegunaan pemeriksa

2(b)

1

2(c)

2

2(d)

2

TOTAL

6

3. Diagram 3.1 shows an activity carried out to study the effect of acids on calcium carbonate.
 Rajah 3.1 menunjukkan satu aktiviti dijalankan untuk mengkaji kesan asid terhadap kalsium karbonat.

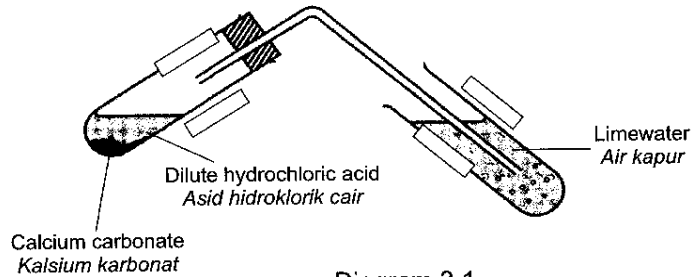


Diagram 3.1
 Rajah 3.1

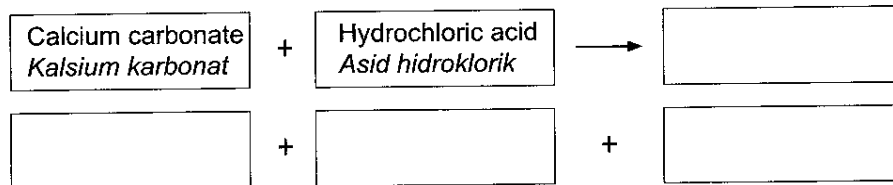
For Examiner's use
 Untuk kegunaan pemeriksa

- a) i) State the effect of dilute hydrochloric acid on calcium carbonate.
 Nyatakan kesan asid hidroklorik cair ke atas kalsium karbonat..

.....

 [1 mark]
 [1 markah]

- ii) Complete the equation to show the reaction in Diagram 3.2.
 Lengkapkan persamaan untuk menunjukkan tindak balas dalam rajah 3.2.



[2 marks]
 [2 markah]

- iii) If the calcium carbonate is replaced with eggshell, predict what will happen to the limewater.
 Sekiranya kalsium karbonat digantikan dengan kulit telur, ramalkan apa yang akan berlaku kepada air kapur.

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

3(a)

4

- b) Diagram 3.2 shows the fractional distillation of petroleum
Rajah 3.2 menunjukkan penyulingan berperingkat bagi petroleum.

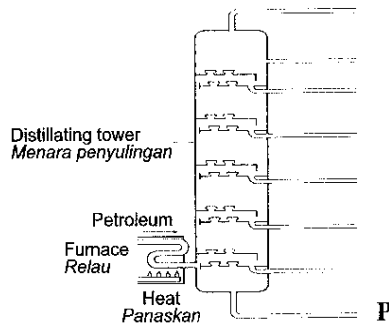


Diagram 3.2
Rajah 3.2

For Examiner's use
 Untuk kegunaan pemeriksa

- i) Fraction P is obtained after petroleum being heated above 350 °C.
 State **one** use of fraction P.
*Pecahan P diperolehi selepas petroleum dipanaskan melebihi 350 °C.
 Nyatakan **satu** kegunaan pecahan P.*

[1 mark]
 [1 markah]

- ii) Explain how the petroleum industries have contributed to the economic development of our country.
Terangkan bagaimana industri petroleum telah menyumbang kepada perkembangan ekonomi negara kita.

[1 mark]
 [1 markah]

3(b)

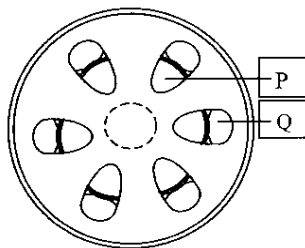
2

TOTAL

6

4. Diagram 4.1 shows the cross section of the stem of a balsam plant immersed in dilute red ink.
Rajah 4.1 menunjukkan keratan rentas batang pokok keembong yang direndamkan dalam dakwat merah cair.

Diagram 4.1
Rajah 4.1



- a) i) Shade the region which are stained red in Diagram 4.1
 Lorekkan bahagian yang bertanda merah dalam Rajah 4.1.

[1 mark]
 [1 markah]

- ii) State the function of the region in (a) (i).
 Nyatakan fungsi bahagian di (a)(i)

.....

[1 mark]
 [1 markah]

- b) Why is it important for water to be transported to the leaf from the root ?
 Kenapakah air penting untuk diangkut ke daun dari akar ?

.....

[1 mark]
 [1 markah]

- c) An activity carried out to remove the ring of bark of a balsam plant as shown in Diagram 4.2.
 Satu aktiviti dijalankan untuk mengeluarkan gelang kulit pada pokok keembung seperti yang ditunjukkan dalam Rajah 4.2.

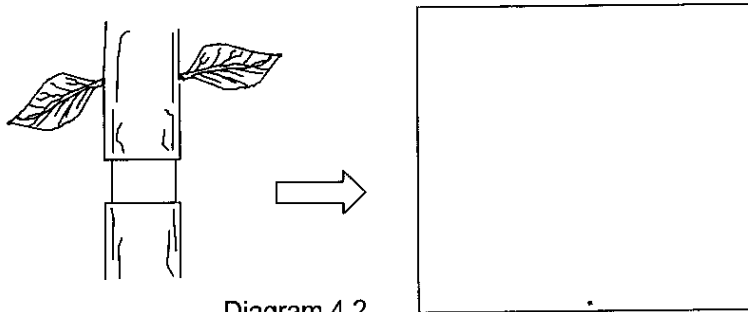


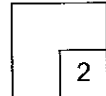
Diagram 4.2
 Rajah 4.2

- (i) What can be observed about the condition of the plant after 8 weeks?
 Draw your observation in the box provided.
 Apakah yang boleh diperhatikan tentang keadaan pokok itu selepas 8 minggu? Lukiskan pemerhatian anda di dalam kotak yang disediakan.

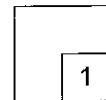
[1 mark]
 [1 markah]

For Examiner's use
 Untuk kegunaan pemeriksa

4(a)



4(b)



- (ii) What is accumulated at top of the ring after two weeks ?
 Apakah yang terkumpul di bahagian atas gelang selepas dua minggu ?

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

- (iii) Give an inference of the observation above ?
 Berikan satu inferen tentang pemerhatian di atas ?

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

For Examiner's use
 Untuk kegunaan pemeriksa

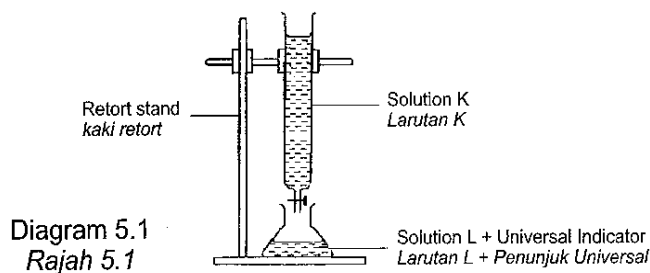
4(c)

3

TOTAL

6

5. Diagram 5 shows the titration process.
 Rajah 5 menunjukkan proses penitratan.



- (a) What is neutralisation?
 Apakah maksud peneutralan?

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

5(a)

1

- (b) Write down the general word equation for the neutralisation reaction.
 Tuliskan persamaan umum dalam perkataan bagi proses peneutralan.

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

5(b)

1

(c) Give **one** example of solution K and L.
 Berikan satu contoh bagi larutan k dan L.

(i) Solution K :

.....
 Larutan K

(ii) Solution L :

.....
 Larutan L [2 marks]
 [2 markah]

(d) (i) What is the pH value of the solution in the conical flask at the end- point of the reaction?
 Apakah nilai pH larutan dalam kelalang kon di akhir tindakbalas?

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

(ii) What is the colour of the universal indicator if excess of solution K has been added to the solution L?
 Apakah warna penunjuk universal jika larutan K ditambah secara berlebihan ke dalam larutan L?

.....
 [1 marks]
 [1 markah]

(e) State **two** uses of neutralisation in our daily life.
 Nyatakan dua kegunaan peneutralan dalam kehidupan harian.

(i)

(ii)
 [2 marks]
 [2 markah]

For Examiner's use
 Untuk kegunaan pemeriksa

5(c)

2

5(d)

2

5(e)

2

TOTAL

8

6. Diagram 6.1 shows the electrical energy transmission and distribution system.

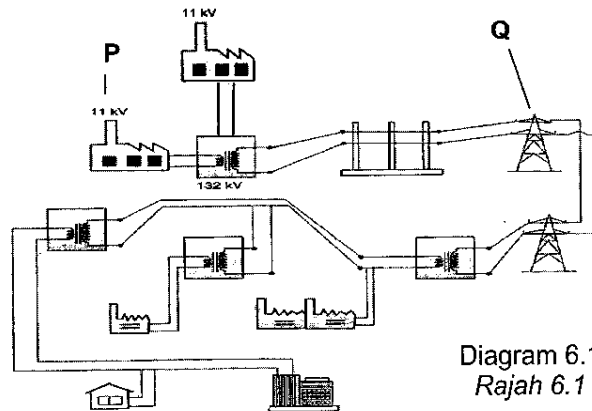


Diagram 6.1
Rajah 6.1

Rajah 6.1 menunjukkan sistem penghantaran dan pengagihan kuasa elektrik.

a. Based on diagram 6.1, identify the components labeled P and Q.
Berdasarkan rajah 6.1, kenalpasti komponen berlabel P dan Q.

P:

Q:

[2 marks]
[2 markah]

6(a)

2

b. What is the function of Q?
Apakah fungsi Q?

.....
.....

[1 mark]
[1 markah]

6(b)

1

c. If P is closed for maintenance, what will happen to the electrical power supply in this area?

Jika P ditutup untuk penyelenggaraan, apakah yang akan berlaku kepada bekalan kuasa elektrik di kawasan ini?

.....
.....

[1 mark]
[1 markah]

6(c)

1

For Examiner's use
Untuk kegunaan pemeriksa

- d. Diagram 6.2 shows a transformer
Rajah 6.2 menunjukkan satu transformer

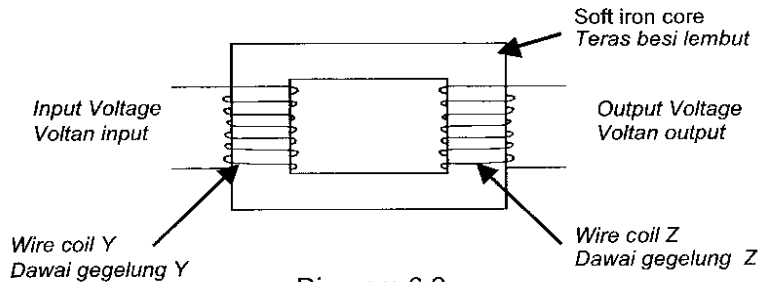


Diagram 6.2
Rajah 6.2

Based on diagram 6.2, explain how to change the transformer above into step-down transformer.
Berdasarkan rajah 6.2, terangkan bagaimana untuk menukarkan transformer di atas kepada transformer injak turun.

.....

[1 mark]
 [1 markah]

6(d)

1

- e. i) An air-conditioner is marked 2500 W, 240 V. Calculate the value of current.
Sebuah penyaman udara dilabel 2500 W, 240 V. Hitungkan nilai arus.

Power = Current x Voltage
Kuasa = Arus x Voltan

[2 mark]
 [2 markah]

- ii) Based on your answer in 5 (e) (i), circle a suitable rating for a fuse to protect the air-conditioner.
Berdasarkan jawapan anda di 5 (e) (i), bulatkan nilai fius yang sesuai bagi melindungi penyaman udara.

1A	5A	10A	13A
----	----	-----	-----

[1 mark]
 [1 markah]

6(e)

3

TOTAL

8

7. Diagram 7.1 shows the apparatus set-up used to determine the products of combustion of carbon, charcoal, kerosene and candle wax.
Rajah 7.1 menunjukkan susunan radas digunakan untuk menentukan hasil pembakaran karbon, arang batu, kerosin dan lilin.

For Examiner's use
 Untuk kegunaan pemeriksa

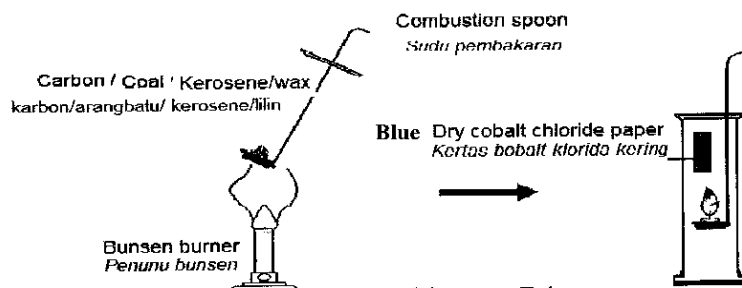


Diagram 7.1
 Rajah 7.1

Diagram 7.2 shows the result of the experiment.
Rajah 7.2 menunjukkan keputusan eksperimen.

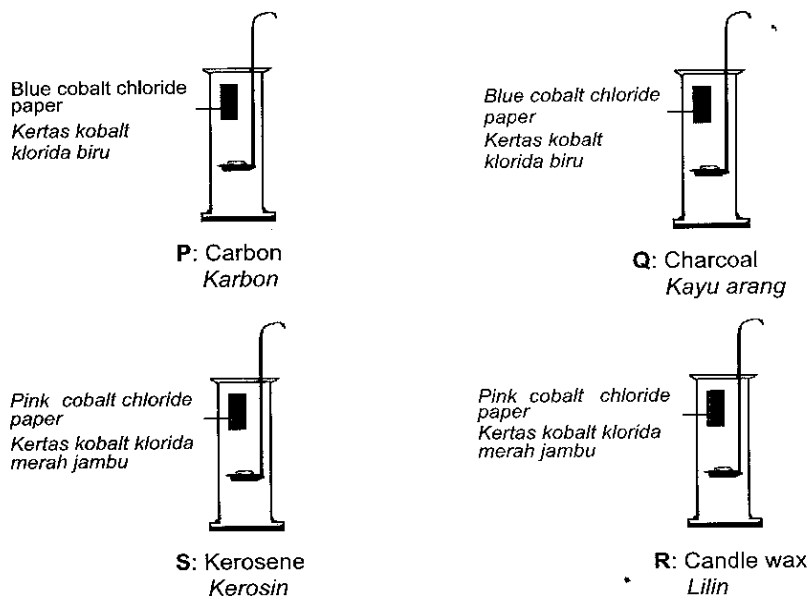


Diagram 7.2
 Rajah 7.2

- a) State **one** observation of P, Q, R and S in diagram 7.2, based on presence of water
 Nyatakan **satu** pemerhatian bagi P, Q, R dan S dalam rajah 7.2 berdasarkan kehadiran air.

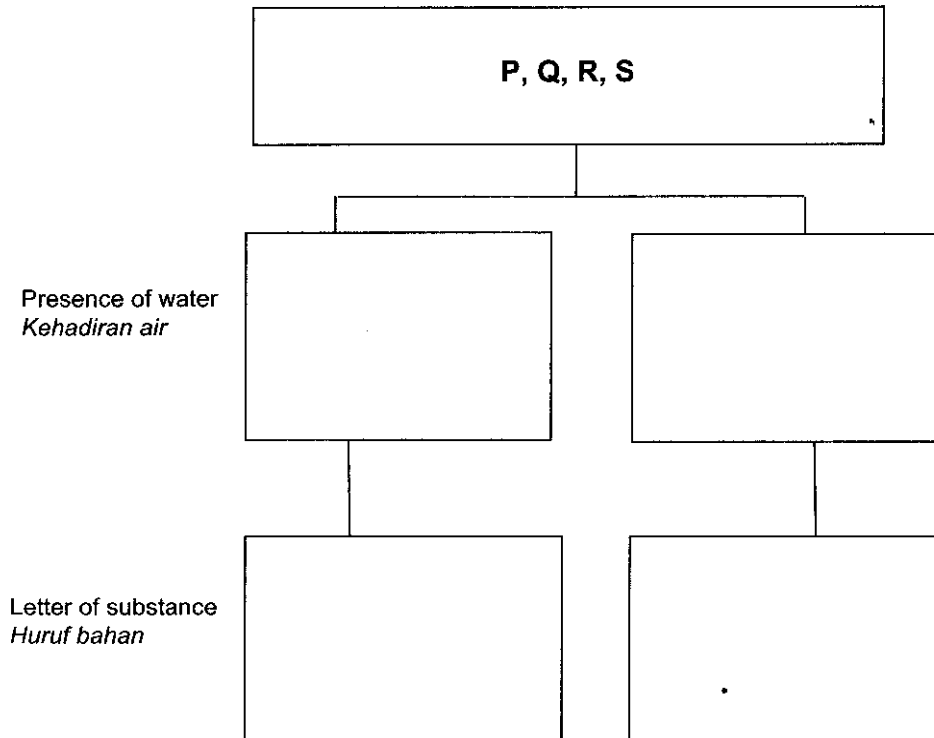
P:.....

Q:.....

R:.....

S:.....

- b) Based on the observations , classify P, Q, R and S into two groups based on presence of water.
 Berdasarkan pemerhatian , kelaskan P, Q, R dan S kepada dua kumpulan berdasarkan kehadiran air.



For Examiner's use
 Untuk kegunaan pemeriksa

7(a)

	4
--	---

7(b)

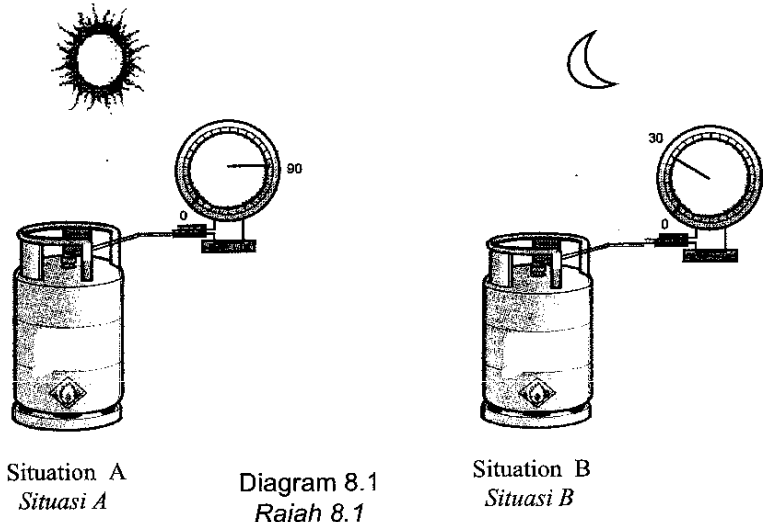
	4
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TOTAL

	8
--	---

8. (a) Diagram 8.1 shows air pressure in two gas containers in different situation.
Rajah 8.1 menunjukkan tekanan udara dalam dua tabung gas yang sama dalam keadaan yang berbeza.

For Examiner's use
 Untuk kegunaan pemeriksa



- (i) Based on the above observation, state the difference in air pressure in both situations.
Berdasarkan pemerhatian anda di atas, nyatakan perbezaan tekanan udara dalam kedua-dua keadaan.

.....

[1 mark]
 [1 markah]

- (ii) State one hypothesis based on your observations in Diagram 8.1
Nyatakan satu hipotesis berdasarkan pemerhatian dalam Rajah 8.1

.....

[1 mark]
 [1 markah]

- (b) A student carried out an experiment to investigate Situation A and Situation B. Diagram 8.2 shows an experiment to study the relationship between the air pressure and temperature.
Seorang budak menjalankan eksperimen untuk menyiasat Situasi A dan Situasi B. Rajah 8.2 menunjukkan satu eksperimen untuk mengkaji hubungan antara tekanan udara dan suhu.

8(a)

	2
--	---

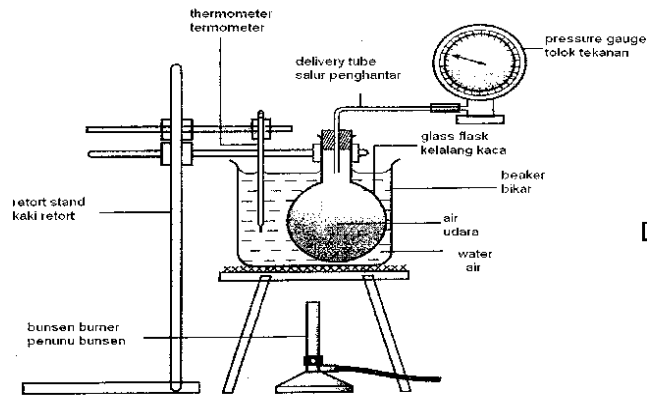


Diagram 8.2
Rajah 8.2

For Examiner's use
Untuk kegunaan pemeriksa

- i) Table 8.3 shows the reading of the pressure gauge of the experiment.
Jadual 8.3 menunjukkan bacaan tolok tekanan dari eksperimen di atas.

Temperature ⁰ C <i>Suhu air</i>	Reading of the pressure gauge/Pascal <i>Bacaan tolok tekanan /Pcal</i>
20 ⁰ C	100
40 ⁰ C	107
60 ⁰ C	114
80 ⁰ C	
100 ⁰ C	128

Diagram 8.3
Rajah 8.3

- ii) State the variables involved in this experiment.
Nyatakan pembolehubah yang terlibat dalam eksperimen ini.

(i) Manipulated variable:
Pembolehubah dimanipulasikan:

(ii) Responding variable:
Pembolehubah bergerak balas:.....

(iii) Constant variable:
Pembolehubah dimalarkan:

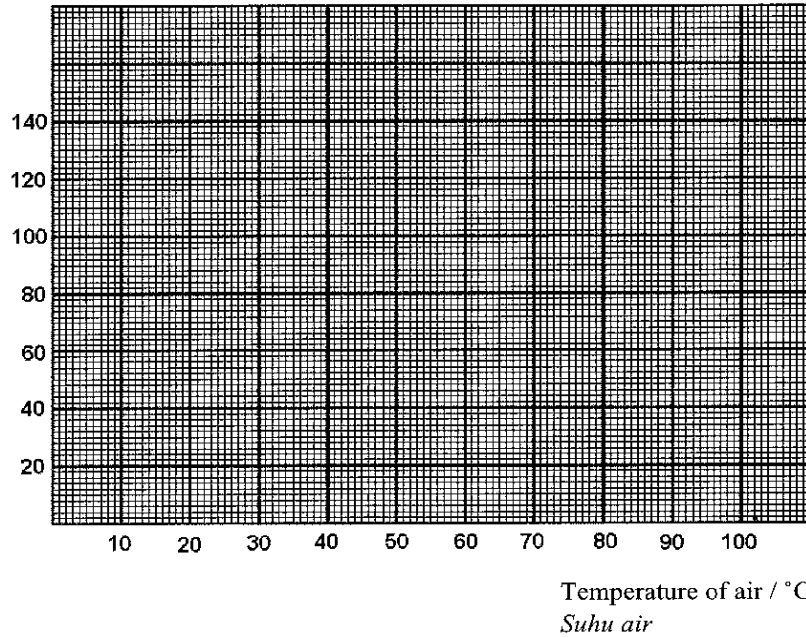
[3 marks]
[3 markah]

8(b)

	3
--	---

- c) Using table 8.3, draw a graph of air pressure against temperature.
 Menggunakan jadual 8.3, lukiskan graf tekanan udara melawan suhu

Air Pressure/ Pcal
 Tekanan Udara



[2 marks]
 [2 markah]

For Examiner's use
 Untuk kegunaan pemeriksa

8(c)

2

- d) State a relationship between the pressure and temperature of air.
 Nyatakan satu hubungan antara tekanan dan suhu udara.

.....

[1 mark]
 [1 markah]

8(d)

1

- (e) Predict the reading of the pressure gauge if the temperature of air is 80 °C.
 Ramalkan bacaan tolok tekanan jika suhu udara ialah 80 °C.

.....

[1 mark]
 [1 markah]

8(e)

1

- (f) Based on the graph, state an inference.
Berdasarkan graf, nyatakan satu inferen.

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

- (g) Based on experiment above, state the operational definition of air pressure.
Berdasarkan eksperimen di atas, nyatakan definisi secara operasi bagi tekanan udara.

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

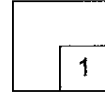
- (h) Concept of air pressure is used to solve various problems in our daily life.
 State one example involving application of air pressure.
Tekanan udara digunakan untuk mengatasi pelbagai masalah dalam kehidupan harian kita. Nyatakan satu contoh aplikasi yang melibatkan tekanan udara.

.....

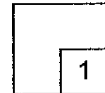
 [1 mark]
 [1 markah]

For Examiner's use
 Untuk kegunaan pemeriksa

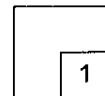
8(f)



8(g)

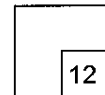


8(h)

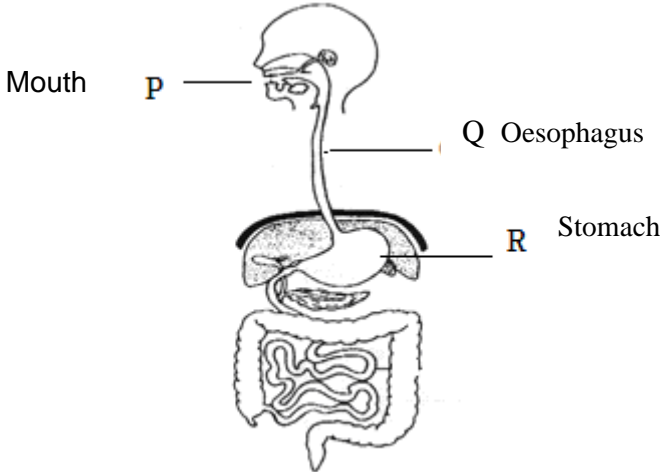


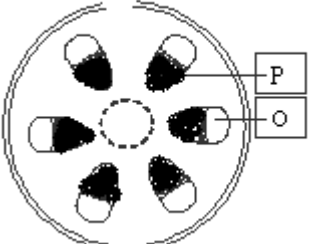
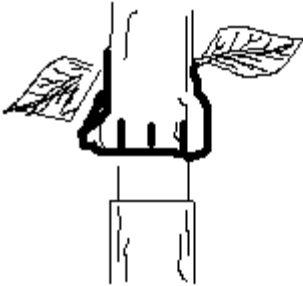
END OF QUESTION PAPER

TOTAL



**SCHEME OF ANSWER
PAPER TWO
TRIAL PMR 2010**

No.	Description	Marks	Total								
<p align="center">1</p>	<p>(a)</p> 	3	3								
	<p>(b) Digestive system</p>	1	1								
	<p>(c) amylase</p>	1	1								
	<p>(d) to kill bacteria/microorganism</p>	1	1								
	<p>6</p>										
<p>2</p>	<p>(a) Water, Oil, Cork</p>	1	1								
	<p>(b) The cork is less dense than water/ The water is denser than cork</p>	1	1								
	<p>(c) (i) Tie up the cork to the stone (ii) The stone is denser than water so the stone will sink in water.</p>	1 1	2								
	<p>(d)</p> <table border="1" data-bbox="461 1503 1273 1661"> <tr> <td align="center">Hot air balloon</td> <td align="center">Car</td> <td align="center">Submarine</td> <td align="center">Bicycle</td> </tr> <tr> <td align="center">/</td> <td></td> <td align="center">/</td> <td></td> </tr> </table>	Hot air balloon	Car	Submarine	Bicycle	/		/		2	2
	Hot air balloon	Car	Submarine	Bicycle							
/		/									
<p>6</p>											

<p>3</p>	<p>(a) (i) React with calcium carbonate to form salt, carbon dioxide and water</p> <p>(ii)</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;">Calcium carbonate</div> <div style="margin-right: 10px;">+</div> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;">Hydrochloric acid</div> <div style="margin-right: 10px;">→</div> </div> <div style="display: flex; align-items: center; justify-content: center; margin-top: 20px;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;">Calcium Chloride</div> <div style="margin-right: 10px;">+</div> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;">Carbon dioxide</div> <div style="margin-right: 10px;">+</div> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;">Water</div> </div> <p style="text-align: right; margin-right: 50px;">3 correct answers = 2 marks 2 correct answers = 1 mark</p> <p>(iii) Lime water turns cloudy/ milky/ chalky</p> <p>(b) For road surfacing</p> <p>(c) create job opportunities/ development of new township</p>	<p>1</p> <p>2</p> <p>1</p> <p>1</p> <p>1</p>	<p>1</p> <p>2</p> <p>1</p> <p>1</p> <p>1</p> <p style="text-align: center; border-top: 1px solid black;">6</p>
<p>4</p>	<p>(a) (i)</p>  <p>(ii) to transport water and mineral salt</p> <p>(b) to carry out photosynthesis/ for turgidity of cell</p> <p>(c) (i)</p> 	<p>1</p> <p>1</p> <p>1</p> <p>1</p>	<p>1</p> <p>1</p> <p>1</p>

	(c) (ii) food/Glucose (iii) Food cannot be transported to the lower part of the ring	1 1	1 1	6				
5	(a) Is the reaction between an acid and alkali to form salt and water (b) Acid + Alkali \longrightarrow Salt + Water (c) (i) Solution K : Hydrochloric acid Sulphuric acid Nitric Acid (either one/any other suitable answer) (ii) Solution L : Natrium hydrochide Calcium Hydrochide Potassium Hydrochide (either one/any other suitable answer) (d) pH 7 (e) Yellow/Red (either one) (f) Brushing the teeth with alkali toothpaste/taking antacids for gastric pain/using acid to neutralize wasp stings/using alkali to neutralize ant or bee stings/ adding alkali to acidic soil (any other suitable example)	1 2 1 1 1 1 1 1 1 1	1 2 1 1 1 1 1 1 1 1	8				
6	(a) P: Power Sation Q: National Grid Network (b) Connect power stations with users / transmits electricity from power Stations to users (c) Eletrical power still continuously supply (d) Decreases number of turns in wire coil Z / Increases number of turns In wire coil Y (e) (i)Current= Power/ voltage = 2500 / 240 = 10.4 A (ii) <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding: 2px 10px;">1A</td> <td style="padding: 2px 10px;">5A</td> <td style="padding: 2px 10px;">10A</td> <td style="padding: 2px 10px; border: 2px solid black; border-radius: 50%;">13A</td> </tr> </table>	1A	5A	10A	13A	2 1 1 1 1 1 1	2 1 1 1 1 2	8
1A	5A	10A	13A					

7	<p>P: There is no water// water is not formed/present Q:There is no water// water is not formed/present R:There is water//water is present S: There is water//water is present</p> <p>(b)</p> <div style="text-align: center; border: 1px solid black; width: fit-content; margin: 0 auto; padding: 5px;">P, Q, R, S</div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="border: 1px solid black; padding: 10px; width: 45%;">Water is present</div> <div style="border: 1px solid black; padding: 10px; width: 45%;">Water is not present/ Water is absent</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="border: 1px solid black; padding: 5px; width: 45%;">P, Q</div> <div style="border: 1px solid black; padding: 5px; width: 45%;">R, S</div> </div>	<p>1 1 1 1</p> <p>1+1</p> <p>1+1</p>	<p>4</p> <p>4</p> <p>8</p>

8	(a) (i) air pressure is greater in situation A / Air pressure is lower in situation B	1	
	(ii) The higher the temperature, the greater the air pressure/ Air pressure is greater in hot day/ air pressure is lower in cold day/ Air pressure is greater under sunlight/ air pressure is lower at Night	1	2
	(b) (ii) (i) Temperature of air	1	
	(ii) Reading of the pressure gauge/ the value of air pressure	1	
	(iii) Volume of water/ volume of air	1	3
	(c) Plot the graf with all point correct – 1 mark	1	
	Draw a straight line - 1 mark	1	2
	(d) The higher the temperature of air, the greater the air pressure/The lower the temperature , the lower the air pressure.	1	1
	(e) 121 Pcal	1	1
	(f) Air pressure is affected by temperature/ As the temperature increases The air pressure also increases	1	1
(g) Air pressure is the reading of the pressure gauge	1	1	
(h) Pouring condensed milk from a sealed can/ a blockage in a sink	1	1	
			12

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