55/1
Sains
Kertas 1
Ogos
2009
1 jam

NO. KAD PENGENALAN

Nama : .....

ANGKA GILIRAN

Tingkatan : .....

JABATAN PELAJARAN NEGERI KELANTAN,
DENGAN KERJASAMA

PER

INFORMATION FOR CANDIDATES
MAKLUMAT UNTUK CALON

1. This question consists 40 questions.
Kertas soalan ini mengandungi 40 soalan

2. Answer all questions.
Jawab semua soalan

3. Answer each question by blackening the correct space on the answer sheet
Jawab semua soalan dengan menghitamkan ruang yang betul pada kertas jawapan.

4. If you wish to change your answer, neatly erase out the answer that you have blackened. Then blacken the space for your new answer.
Jika anda hendak menukar jawapan , batalakan dengan kemas jawapan yang telah dihitamkan. 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 kecualu dinyatakan

6. You may use a non-programmable scientific calculator.
Anda dibenarkan menggunakan kalkulator saintifik yang tidak boleh diprogramkan.

JANGAN B

1. Kertas soalan ini

2. Soalan di bahag
bahasa Melayu.

3. Calon dikehenda

4. Calon dikehenda

Kertas soalan ini

1.Diagram 1 shows a measuring tool
Rajah 1 menunjukkan satu alat ukuran

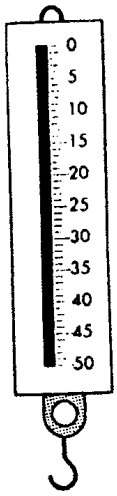


Diagram 1
Rajah 1

What is the use of this tool ?
Apakah kegunaan alat itu ?

A. Measure the mass of an object.
Mengukur jisim sesuatu objek

B. Measure the weight of an object
Mengukur berat sesuatu objek

C. Measure the area of an object.
Mengukur luas sesuatu objek

D. Measure the length of an object
Mengukur panjang sesuatu objek

2. Which is a unicellular organism?
Yang manakah organisma unisel?

A

C

B

D

3. The informations shows various stages of a structural organisation of cells in the human body.
Maklumat menunjukkan peringkat struktur organisasi sel dalam tubuh manusia.

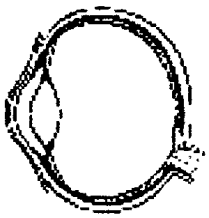
P	→	Tissue *Tisu*	→	Organ *Organ*	→	System → Organism *Sistem* *Organisma*

Which of the diagram below represents P ?
Antara rajah berikut yang manakah mewakili P?

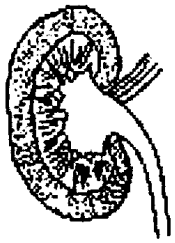
A

C

B



D



4. Table 1 shows four types of materials with different masses and volumes at temperature 20^0C
Jadual 1 menunjukkan empat jenis bahan yang mempunyai jisim dan isipadu yang berlainan pada suhu 20^0C

$$\text{Density (g /cm}^3\text{)} = \frac{\text{Mass (g)}}{\text{Volume (cm}^3\text{)}}$$

Material *Bahan*	Mass(g) *Jisim*	Volume(cm^3) *Isipadu*
Aluminium *Aluminium*	135	50
Copper *Kuprum*	450	50
Iron *Besi*	395	50
Gold *Emas*	965	50

Table 1
Jadual 1

Which arrangement of the materials is in ascending order according to their densities
Susunan bahan manakah adalah mengikut ketumpatan menaik

A Gold, Copper, Iron, Aluminium
Emas, Kuprum, Besi, Aluminium

B Iron, Copper, Gold, Aluminium
Besi, Kuprum, Emas, aluminium

C Copper, Aluminium, Iron, Gold
Kuprum, Aluminium, Besi, Emas

D Aluminium, Iron, Copper, Gold
Aluminium, besi, kuprum, emas

5. Diagram 2 shows a process to separate a substance from its mixture
Rajah 2 menunjukkan proses untuk memisahkan bahan dari campurannya

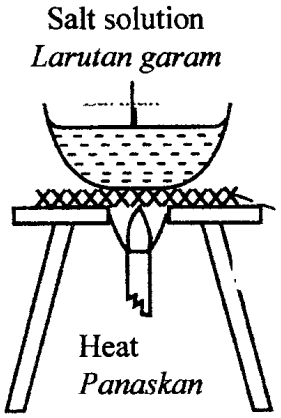


Diagram 2
Rajah 2

What is the method used?
Apakah kaedah yang digunakan.

A Filtration.
Penurasan

C. Distillation
Penyulingan

B Evaporation.
Penyejatan

D. Crystallization
Penghabluran

6. The information below shows the effect of increasing carbon dioxide in the atmosphere
Maklumat dibawah menunjukkan kesan peningkatan karbon dioksida dalam atmosfera

• Increase of Earth temperature *Pertambahan suhu bumi* • Global warming *Pemanasan global*

What is the phenomenon called ?
Apakah nama fenomenon itu?

A Haze.
Jerebu

C. Green house effect
Kesan rumah hijau

B Acid rain
Hujan asid

D. Ultraviolet radiation
Radiasi ultra ungu

7. Diagram 3 shows a lighted candle under different size of beaker.
Rajah 3 menunjukkan sebatang lilin diletakkan dibawah bikar berlainan saiz

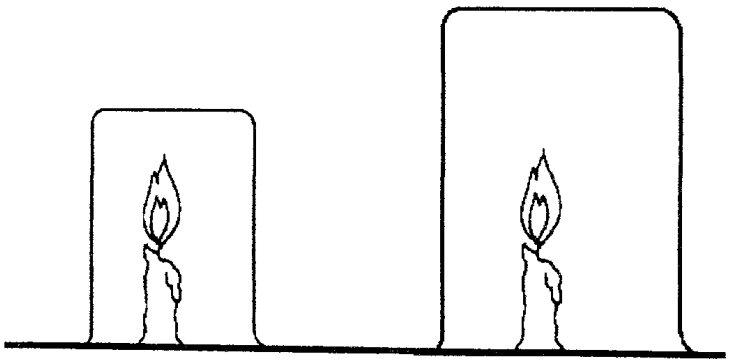


Diagram 3
Rajah 3

Which inference is **true?**
*Inferens yang manakah **benar***

A. Candle under beaker P extinguishes first
Lilin di bawah bikar P padam dahulu

B. Water droplet forms on the inner wall of the beaker
Titisan air terbentuk pada dinding dalam bikar

C. Combustion of candle releases carbon dioxide
Pembakaran petrol membebaskan karbon dioksida

D. Combustion of candle requires oxygen
Pembakaran lilin memerlukan oksigen

8. The word equation below represents cell respiration.
Persamaan perkataan di bawah mewakili respirasi sel

Glucose + *P* → water + *Q* + energy *Glukosa* + *P* → *air* + *Q* + *tenaga*

. What are the percentages of gases P and Q in the atmosphere?
Apakah peratus gas P dan Q dalam atmosfera?

	P	*Q*
A	78 %	21 %
B	21 %	0.03 %
C	16 %	4 %
D	21 %	4 %

9. Diagram 4 shows a lighted candle
Rajah 4 menunjukkan lilin menyala

Diagram 4
Rajah 4

What is the change of energy?
Apakah perubahan tenaga yang berlaku?

A	Light energy → nuclear energy + heat energy *Tenaga cahaya* *tenaga nuklear* + *tenaga haba*
B	Chemical energy → heat energy + light energy *Tenaga kimia* → *tenaga haba* + *tenaga cahaya*
C	Potential energy → kinetic energy → heat energy *Tenaga keupayaan* → *tenaga kinetik* → *tenaga cahaya*
D	Chemical energy → electrical energy → potential energy *Tenaga kimia* → *tenaga elektrik* → *tenaga keupayaan*

10. Diagram 5 shows a heated bimetallic strips.
Rajah 5 menunjukkan jalur dwilogam yang di panaskan

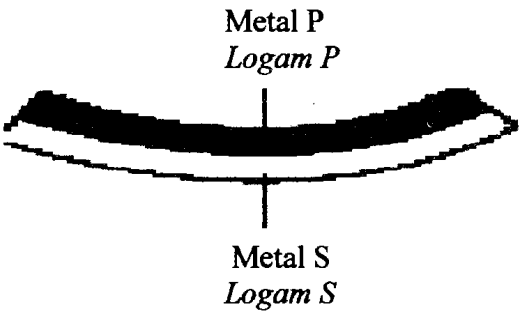


Diagram 5
Rajah 5

Which appliance uses the principle of expansion of the metals above?
Alatan manakah menggunakan prinsip pengembangan logam di atas?

A Fire alarm
Penggera kebakaran

B Alarm clock
Jam penggera

C. Door bell
Loceng pintu

D. Electric crane
Kren elektrik

11. Which solution is used to test for the presence of glucose?
Larutan manakah digunakan untuk menguji kehadiran glukosa?

A Salt solution
Larutan garam

B Millon's reagent
Reagen Millon

C. Iodine solution
Larutan Iodin

D. Benedict's solution
Larutan Benedict

12. Diagram 6 shows a mixture of saliva and starch that is kept at 37 °C.
Rajah 6 menunjukkan campuran air liur dan kanji yang disimpan pada 37 °C

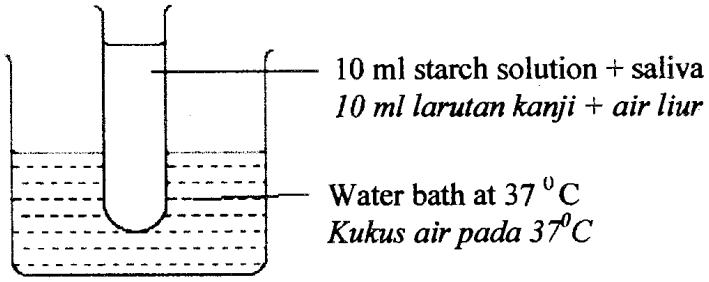


Diagram 6
Rajah 6

After a few minutes what happens to starch?
Apa yang berlaku pada kanji selepas beberapa minit?.

A. Changed to glucose
Berubah kepada glukosa
B. Changed to protein
Berubah kepada protein
C. Changed to amino acid
Berubah kepada asid amino
D. Changed to lactose
Berubah kepada laktosa

13. The information below shows some characteristics of a tropism.
Maklumat menunjukkan ciri-ciri tropisme dalam tumbuhan

- Shoots do not show this response
Pucuk tidak menunjukkan respons ini
- Enables the plant to obtain minerals
Membolehkan tumbuhan mendapatkan minerals

What is the type of tropism shown ?
Apakah jenis tropisme di atas?

A Geotropism
Geotropisme
B Phototropism
Fototropisme
C. Hydrotropism
Hidrotropisme
D. Thigmotropism
Tigmotropisme

14. Diagram 7 shows some chicks being warm using a bulb
Rajah 7 menunjukkan beberapa ekor anak ayam yang dipanaskan oleh sebuah mentol

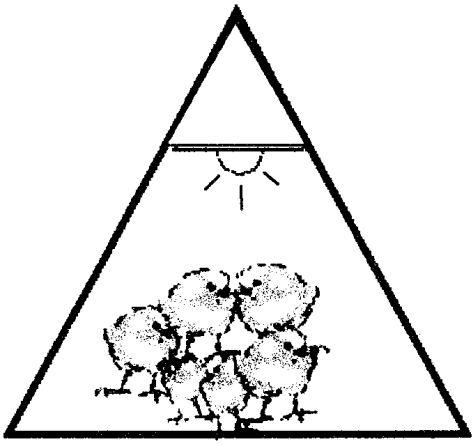


Diagram 7
Rajah 7

Which is the method of heat transfer involved ?
Kaedah pemindahan haba yang terlibat?

A Convection
Perolakan
B Conduction
Konduksi
C. Insulation
Penebatan
D. Radiation
Sinaran

15. Table 2 shows the number of organisms **P, Q** and **R** in a habitat.
Jadual 2 menunjukkan bilangan organisma P,Q dan R dalam sesuatu habitat.

Organisms *Organisma*	**Number of individuals** *Bilangan individu*
P	**5**
Q	**40**
R	**14**

Table 2
Jadual 2

Which food chain shows the relationship between organisms **P, Q** and **R**?
*Rantai makanan manakah menunjukkan hubungan antara organisma **P,Q** dan **R**?*

A P → Q → R

B Q → R → P

C R → Q → P

D R → P → Q

16. Which group of animal consists of invertebrates only ?
Kumpulan haiwan manakah terdiri daripada invertebrata sahaja?

A Fly, prawn, turtle
Lalat, udang ,penyu

B Lizard, frog, duck
Cicak, katak, itik

C Snake, cockroach, mosquito
Ular,lipas,nyamuk

D Spider, ant, crab
Labah-labah, semut, ketam

17. Diagram 8 shows a pyramid number
Rajah 8 menunjukkan sebuah piramid nombor

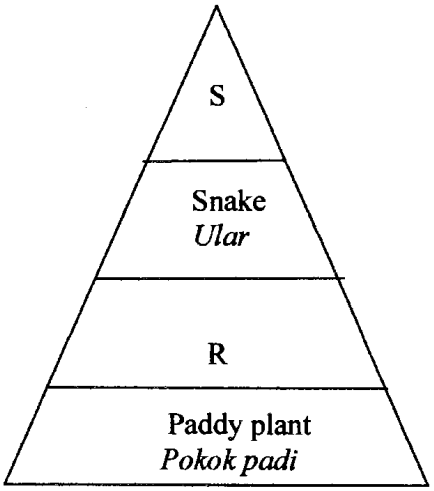


Diagram 8
Rajah 8

Which organisms represent R and S?
Organisma manakah mewakili R dan S?

	R	S
A	Owl *Burung hantu*	Frog *Katak*
B	Rat *Tikus*	Chicken *Ayam*
C	Chicken *Ayam*	Eagle *Helang*
D	Grasshopper *Belalang*	Sparrow *Burung pipit*

18. Diagram 9 shows the process of photosynthesis .
Rajah 9 menunjukkan proses fotosintesis.

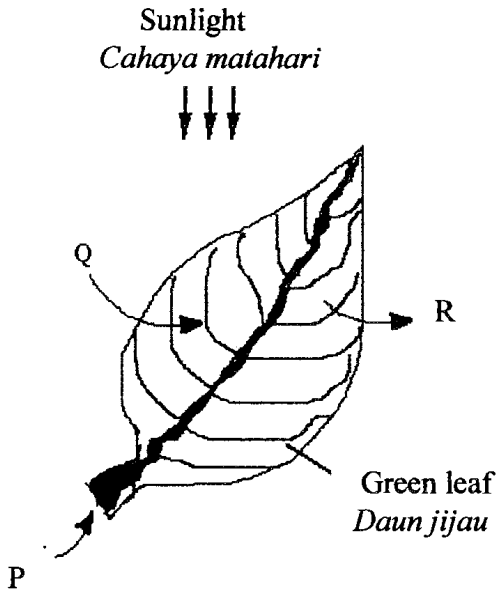


Diagram 9
Rajah 9

Which represent P ,Q and R?
Manakah yang mewakili P,Q dan R?

	P	Q	R
A	Water *Air*	Oxygen *oksigen*	Carbon dioxide *Karbon dioksida*
B	Carbon dioxide *Karbon dioksida*	Water *air*	Oxygen *oksigen*
C	Water *Air*	Carbon dioxide *Karbon dioksida*	Oxygen *Oksigen*
D	Oxygen *Oksigen*	Water *Air*	Carbon dioxide *Karbon diokida*

19. Which process is **most** suitable to kill bacteria in drinking water?
*Proses manakah **paling** sesuai untuk membunuh bakteria dalam air minuman?*

A Filtration
Penurasan

B Distillation
Penyuling

C. Evaporation
Penyejatan

D. Chlorination
Pengklorinan

20. Table 3 shows three substances with their respective pH value.
Jadual 3 menunjukkan tiga bahan dengan nilai pH masing-masing.

Substance *Bahan*	**P**	**Q**	**R**
pH value *Nilai* pH	3	7	12

Table 3
Jadual 3

Which substances represent P, Q and R?
Bahan manakah mewakili P,Q dan R ?

	P	**Q**	**R**
A	Vinegar *Cuka*	Distilled water *Air suling*	Toothpaste *Ubat gigi*
B	Distilled water *Air suling*	Toothpaste *Ubat gigi*	Vinegar *Cuka*
C	Toothpaste *Ubat gigi*	Distilled water *Air suling*	Milk *Susu*
D	Milk *Susu*	Distilled water *Air suling*	Toothpaste *Ubat gigi*

21.. Diagram 10 shows a boy is sucking water using a straw
Rajah 10 menunjukkan seorang pelajar sedang menyedut air dengan menggunakan menyedut minuman

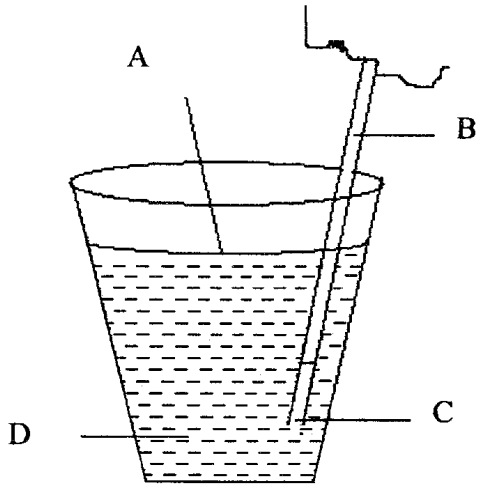


Diagram 10
Rajah 10

At which point A, B, C or D has the lowest air pressure?
Pada titik manakah A, B, C dan D mempunyai tekanan udara yang paling rendah?

22. Diagram 11 shows the apparatus set up to study the composition of water.
Rajah 11 menunjukkan susunan radas untuk mengkaji komposisi air.

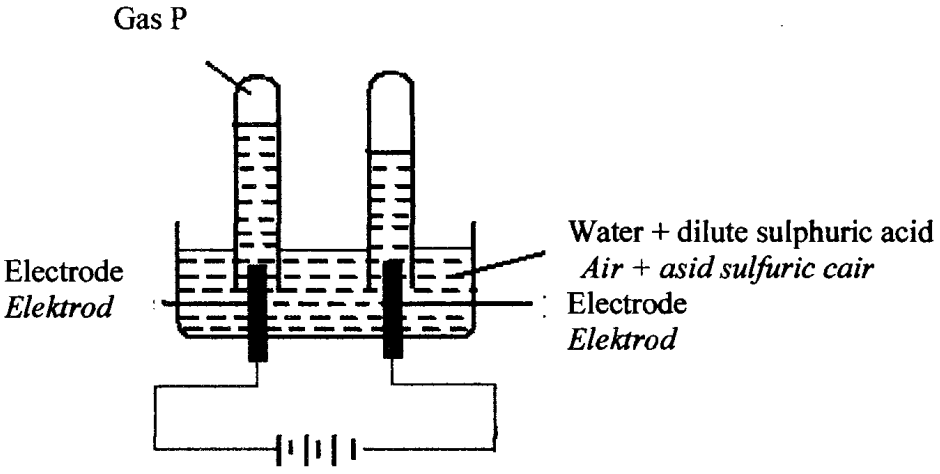


Diagram 11
Rajah 11

What is the property of gas P?
Apakah ciri bagi gas P?

A Changes blue litmus paper to red
Menukarkan kertas litmus biru ke merah

B Changes the limewater cloudy
Mengeruhkan air kapur

C Ignites a glowing wooden splinter .
Menyalakan kayu uji berbara

D Produces " pop" sound when tested with a burning wooden splinter
Menghasilkan bunyi " pop " apabila diuji dengan kayu menyala

23. Which instrument can be used to measure the magnitude of force?
Alat manakah boleh digunakan untuk mengukur magnitud daya?

A Compass
Kompas

B Ammeter
Ammeter

C Chemical balance
Neraca kimia

D Spring balance
Neraca spring

24. A student pushed a table weighing 80 N over a distance of 5 m. Calculate the work done .
Seorang pelajar menolak sebuah meja yang beratnya 80 N sepanjang jarak 5 m. Hitung kerja yang telah dilakukan oleh pelajar tersebut?

[Work done (J) = Force (N) X Distance (m)]
[*Kerja (J0 = Daya (N) X Jarak (m)*]

A 75 J
B 85 J
C 400 J
D 805 J

25. Diagram 12 shows a wooden block being dragged along a horizontal surface.
Rajah 12 menunjukkan satu blok kayu ditarik di atas permukaan yang mendatar.

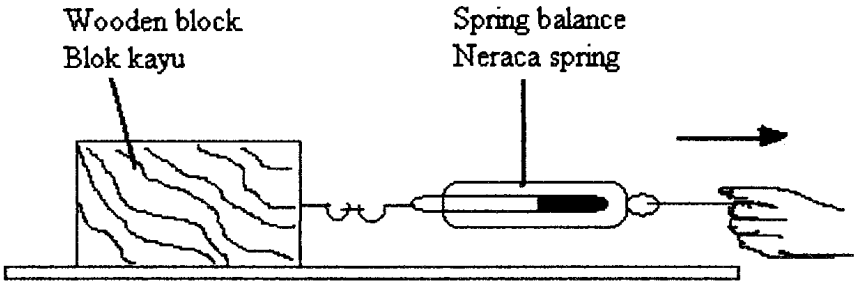


Diagram 12
Rajah 12

Which type of surface will record the highest reading of the spring balance?
Jenis permukaan manakah akan mencatat bacaan yang paling tinggi pada neraca spring?

A Plastic mat
Tikar plastik
B Wooden table
Meja kayu
C Marble floor
Lantai marmar
D Sand paper
Kertas pasir

26. What supports the body weight of a whale ?
Apakah yang menyokong berat badan seekor ikan paus ?

A Bouyancy of water
Keapungan air
B Exoskeleton
Rangka luar
C Backbones
Tulang belakang
D Body fluid
Cecair badan

27. Which can help to increase the stability of a giraffe while drinking water?
Manakah yang akan meningkatkan kestabilan zirafah semasa minum air?

A Straighten its legs
Meluruskan kakinya
B With the help of its long neck
Dengan bantuan leher yang panjang
C Having broad foot sole
Mempunyai tapak kaki yang lebar
D Spreading its legs apart
Menjarakkan bukaan kakinya

28. Diagram 13 shows a wheelbarrow
Rajah 13 menunjukkan sebuah kereta sorong

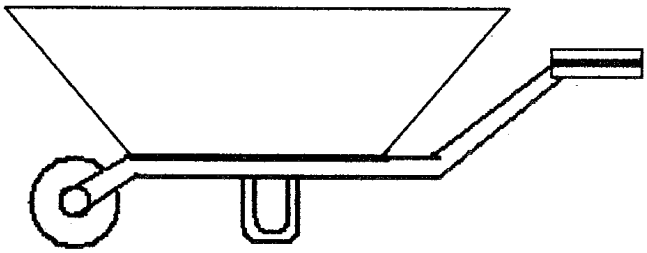


Diagram 13
Rajah 13

Which tool belongs to the same class of lever as the wheelbarrow?
Alat manakah termasuk dalam tuas kelas yang sama dengan kereta sorong ?

A Pliers
Playar

B Fishing rod
Joran

C Ice tong
Penyepit ais

D Paper cutter
Pemotong kertas

29. Diagram 14 shows a lever in equilibrium.
Rajah 14 menunjukkan sistem dalam keadaan seimbang

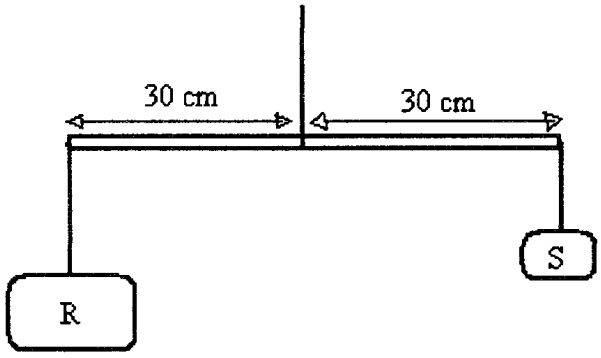


Diagram 14
Rajah 14

Which statement is **true** ?
*Pernyataan yang manakah adalah **benar** ?*

A R is denser than S
R lebih tumpat daripada S
B R is heavier than S
R lebih berat daripada S
C R and S are of the same weight
R dan S adalah sama berat
D R is bigger than S
R lebih besar daripada S

30 Which is the pathway of urine flow out of the body ?
Manakah laluan pengaliran air kencing keluar dari badan ?

A. Ureter→ kidney→ Urinary bladder → urethra
Ureter → ginjal → pundi kencing → uretra
B. Urethra → kidney → ureter → urinary bladder
Uretra → ginjal → ureter → pundit kencing
C. Kidney→ urethra → urinary bladder → ureter
Ginjal → uretra → pundi kencing → ureter
D. Kidney→ ureter → urinary bladder → urethra
Ginjal → ureter → pundit kencing → uretra

31. Diagram 15 shows the blood circulatory system in the human body.
Rajah 15 menunjukkan sistem peredaran darah dalam badan manusia.

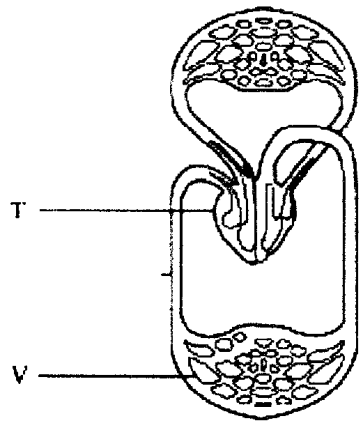


Diagram 15
Rajah 15

What type of blood that flows from V to T ?
Apakah jenis darah yang mengalir dari V ke T ?

A. Oxygenated blood
Darah beroksigen
B. Deoxygenated blood
Ddarah terdeoksigen
C. Oxygenated and deoxygenated blood
Darah beroksigen dan terdeoksigen
D Oxygenated or deoxygenated blood
Darah beroksigen atau terdeoksigen

32. Table 4 shows the blood group of four students .
Jadual4 menunjukkan kumpulan darah bagi empat orang pelajar.

Student *Pelajar*	Blood Group *Kumpulan darah*
P	O
Q	A
R	B
S	AB

Table 4
Jadual 4

If student R needs a blood transfusion,who can donate blood to R?
Jika pelajar R yang memerlukan pemindahan darah ,siapakah yang boleh menderma darah kepada R?

A. P only
P sahaja
B. P and S only
P dan S sahaja
C. S only
S sahaja
D. Q and S only
Q dan S sahaja

33. Diagram 16 shows a longitudinal section of a flower.
Rajah 16 menunjukkan keratan memanjang sekuntum bunga.

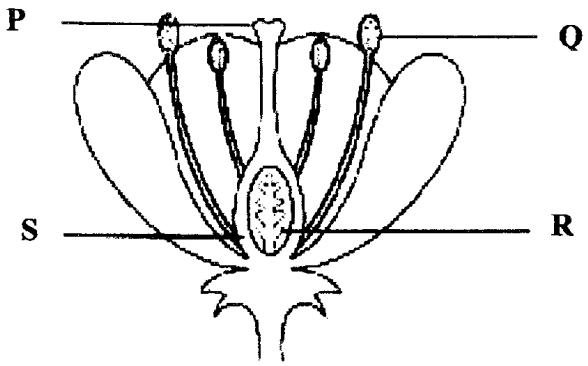
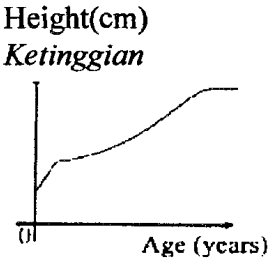


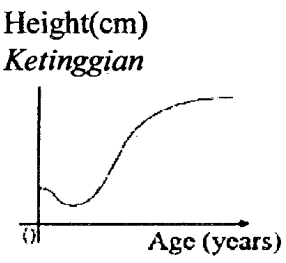
Diagram 16
Rajah 16

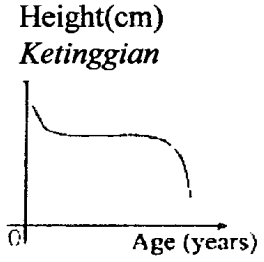
Which parts will develops into the fruit and seeds after fertilisation ?
Bahagian manakah yang akan berkembang menjadi buah dan biji selepas perse nyawaan ?

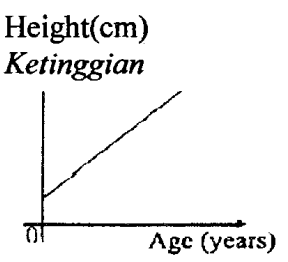
	Fruit *Buah*	Seed *Biji*
A	P	Q
B	S	P
C	S	R
D	R	S

34 , Which graphs shows the growth curve of human ?
Graf manakah menunjukan keluk pertumbuhan manusia ?

A


C


B


D


35, Which petroleum fraction is distilled out first ?
Hasil penyulingan petroleum manakah diperolehi dahulu?

A. Bitumen
Bitumin

C. Diesel
Disel

B. Kerosene
Kerosin

D. Petrol
Petrol

36 Diagram 17 shows the heating of copper carbonate.
Rajah 17 menunjukkan pemanasan kuprum karbonat.

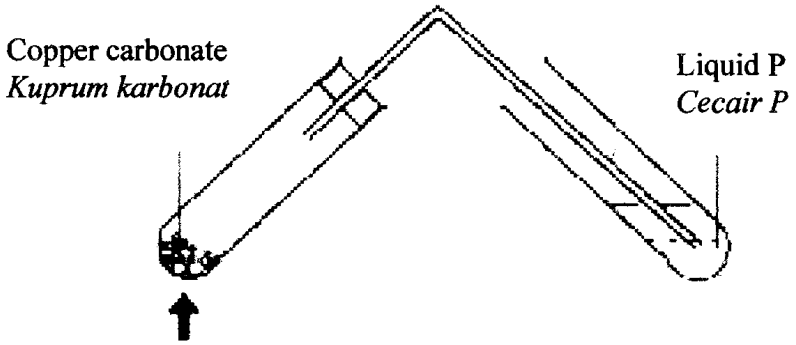


Diagram 17
Rajah 17

What happen to liquid P and name the gas released?
Apakah yang berlaku pada cecair P dan nama gas yang dibebaskan ?

	Liquid P ***Cecair P***	**Gas** ***Gas***
A	Remain unchanged *Tidak berubah*	Oxygen *Oksigen*
B	Turns Cloudy *Menjadi keruh*	Carbon dioxide *Karbon dioksida*
C	Remain unchanged Ti*dak berubah*	Carbon dioxide *Karbon dioksida*
D	Turns colourless *Menjadi jernih*	Sulphur dioxide *Sulfur dioksida*

37. Diagram 18 shows a parallel circuit.
Rajah 18 menunjukkan satu litar selari.

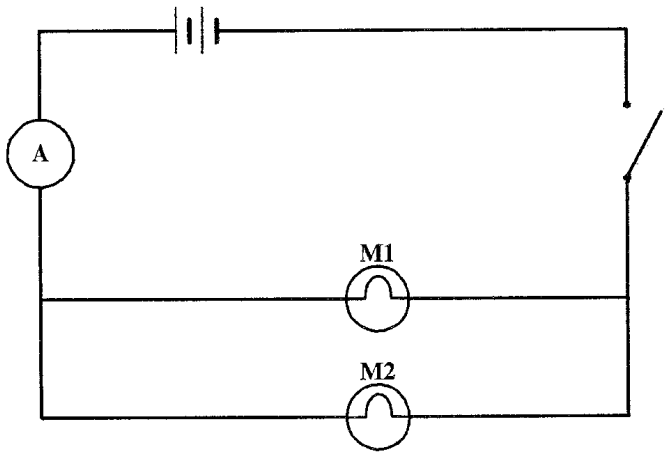


Diagram 18
Rajah 18

M 1 and M 2 are two identical bulbs. The resistance of each bulb is 2 Ohms. Calculate the total resistance in the circuit?
M1 dan M 2 adalah dua mentol yang serupa.Rintangan setiap mentol ialah 2 Ohm. Hitungkan jumlah rintangan dalam litar tersebut

A. 1 Ohm
B. 2 Ohms
C. 3 Ohms
D. 4 Ohms

38, Diagram 19 shows a three-pin plug.
Rajah 19 menunjukkan sebuah palam tiga pin.

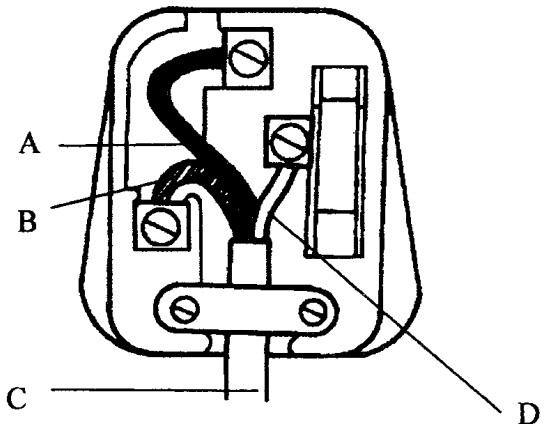
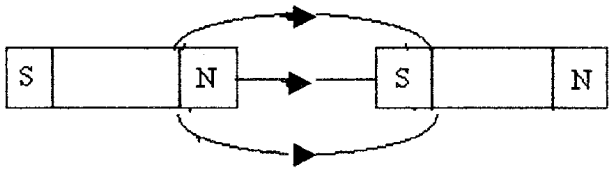


Diagram 19
Rajah 19

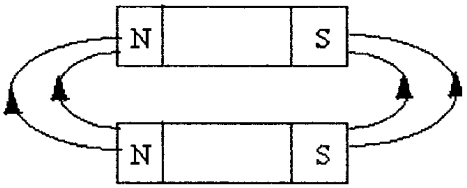
Which part labelled A, B, C or D carries leaked current to the earth?
Bahagian berlabel manakah A, B, C atau D membawa arus terbocor ke bumi?

39. Which diagram shows the correct pattern of magnetic field ?
Rajah manakah menunjukkan corak medan magnet yang betul?

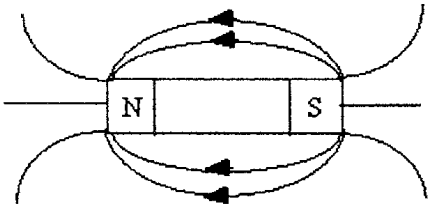
A



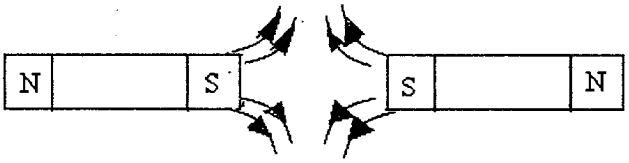
B



C



D



40 Diagram 20 shows the structure of the sun.
Rajah 20 menunjukkan struktur matahari.

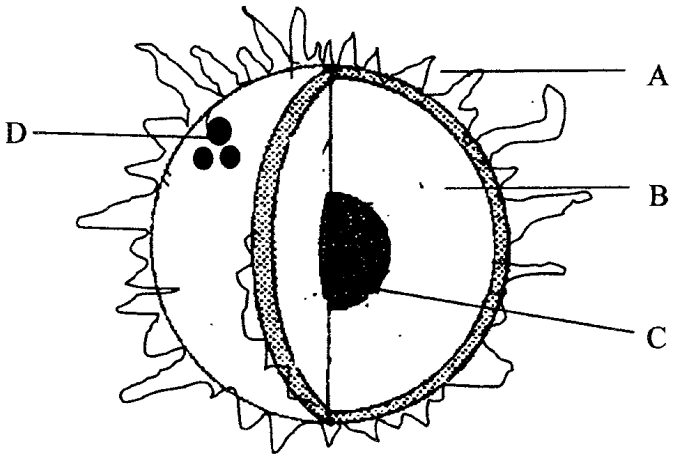


Diagram 20
Rajah 20

Which part labelled A, B, C or D produces a lot of heat energy as a result of nuclear reaction ?
Bahagian berlabel manakah A, B, C atau D menghasilkan tenaga haba yang banyak hasil dari tindakbalas nuklear?

INFORMATION FOR CANDIDATES
MAKLUMAT UNTUK CALON

1. This question consists 40 questions.
Kertas soalan ini mengandungi 40 soalan

2. Answer all questions.
Jawab semua soalan

3. Answer each question by blackening the correct space on the answer sheet
Jawab semua soalan dengan menghitamkan ruang yang betul pada kertas jawapan.

4. If you wish to change your answer, neatly erase out the answer that you have blackened. Then blacken the space for your new answer.
Jika anda hendak menukar jawapan , batalakan dengan kemas jawapan yang telah dihitamkan. 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 kecualu dinyatakan

6. You may use a non-programmable scientific calculator.
Anda dibenarkan menggunakan kalkulator saintifik yang tidak boleh diprogramkan.

55/2
Sains
Kertas 2
2009
1 ½ jam

NO. KAD PENGENALAN

Nama : .....

ANGKA GILIRAN

Tingkatan : .....

JABATAN PELAJARAN NEGERI KELANTAN,
DENGAN KERJASAMA
PERSIDANGAN KEBANGSAAN PENGETUA-PENGETUA
SEKOLAH MENENGAH MALAYSIA
CAWANGAN KELANTAN

PEPERIKSAAN PERCUBAAN

SAINS PMR 2009

KERTAS 2

MASA : 1 JAM 30 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 di bahagian atas adalah dalam bahasa Inggeris. Soalan bahagian bawah 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 2 atau 3.

Nombor Soalan	Markah Penuh	Markah Diperolehi
1	6	
2	6	
3	6	
4	6	
5	8	
6	8	
7	9	
8	11	
	60	

Kertas soalan ini mengandungi 17 halaman bercetak dan 3 halaman tidak bercetak.

Section A
Bahagian A
[40 marks]
[*40 markah*]

Answer all question
Jawab semua soalan

1 Diagram 1 shows cross section of human ear
Rajah 1 menunjukkan keratan rentas telinga manusia

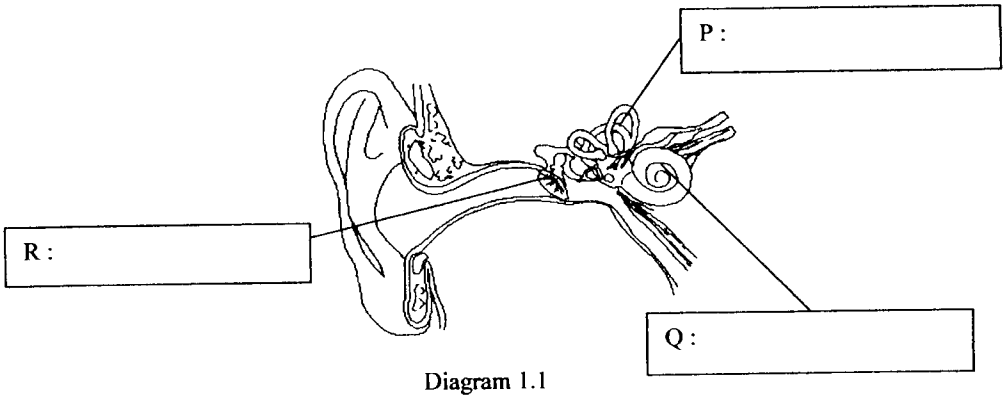


Diagram 1.1
Rajah 1.1

a) Label structures P, Q and R using the following words :
*Labelkan struktur **P**, **Q** dan **R** menggunakan perkataan berikut* :

Eardrum *Gegendang Telinga*	Cochlea *Koklea*	Semi-circular canal *Salur separuh bulat*

1(a)

[3 *marks*]

b) Based on Diagram 1.1, name the structure that does **not** involve in the hearing.
*Berdasarkan Rajah 1.1, namakan struktur yang **tidak** terlibat dengan pendengaran*

1(b)

.....

[1 *mark*]

c) Draw lines to match the parts labelled with their functions
Lukis garisan untuk memadankan bahagian berlabel dengan fungsinya

Part *Bahagian*	Function *Fungsi*
Cochlea *Koklea*	Vibrates when receives sound waves *Bergetar apabila menerima gelombang bunyi*
	Detects vibrations and changes into impulses *Mengesan getaran dan menukarkanya kepada impuls*
Ear drum *Gegendang telinga*	
	Send impulse to the brain *Menghantar impuls ke otak*

[2 *marks*]

1(c)

Total

2. Diagram 2.1shows a ball bearing rolls down a curtain railing.
Rajah 2.1 menunjukkan satu alas bebola menuruni rel langsir.

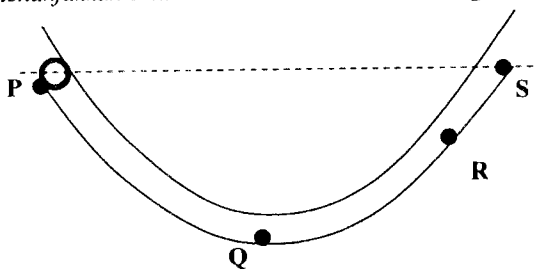


Diagram 2

(a) State the energy possessed by the ball bearing at P.
Nyatakan bentuk tenaga yang dipunyai oleh alas bebola di P.

.....
[1 mark]

2 (a)

(b) At what point does the ball bearing has
Pada titik manakah alas bebola mempunyai

(i) maximum kinetic energy?
tenaga kinetik maksima?

.....
[1 mark]

2 (b)(i)

(ii) explain your answer

.....
[1 mark]

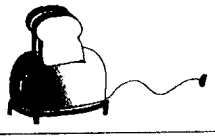
2 (b)(ii)

(c) At which point would the ball bearing reach its highest position after being released from P? Neglect friction force.
Pada titik manakah alas bebola akan mencapai aras paling tinggi selepas ia dilepaskan dari P? Abaikan daya geseran.

.....
[1 mark]

2 (c)

(d) Write the energy changes involved for the following energy converters
Tuliskan perubahan tenaga yang terlibat bagi pengubah tenaga berikut.

	Energy converter	Energy changes involved
(i)	Radio 	
(ii)	Toaster 	

[2 marks]

2 (d)

Total

3. Diagram 3 shows that living things need air for respiration.
Rajah 3 menunjukkan benda hidup memerlukan udara untuk bernafas.

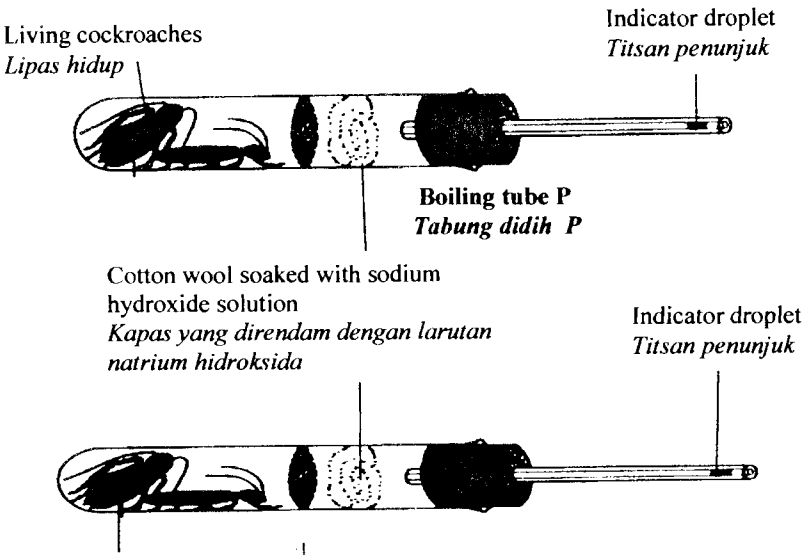


Diagram 3
Rajah 3

(a) Why do living things carry out respiration?
Mengapakah benda hidup menjalankan respirasi?

.....

[1 mark]

3(a)

(b) Explain why the cotton is soaked with the sodium hydroxide solution
Terangkan mengapa kapas direndamkan dengan larutan natrium hidroksida.

.....

[1 mark]

3(b)

(c) Based on diagram 3, which indicator droplet will move closer to the test tube. Explain why?
Berdasarkan Rajah 3, titisan penunjuk manakah yang akan menghampiri tabung uji. Terangkan mengapa?

Test tube / *Tabung uji* : .....

Reason / *Alasan* : .....

: .....

[2 marks]

3(c)

(d) Write the word equation for respiration.
Tuliskan persamaan perkataan bagi respirasi.

Glucose *Glukosa* + [ ] → Water *Air* + Energy *Tenaga* + [ ]

[2 marks]

3(d)

Total

4. Diagram 4 shows the photo of three substances used in daily life
Rajah 4 menunjukkan tiga foto bahan-bahan yang digunakan di dalam kehidupan seharian

Toothpaste
Ubat gigi

Mineral water
Air mineral

Vinegar
Cuka makan

Diagram 4
Rajah 4

(a) State either acid, alkali or neutral in the box provided based on their property.
Nyatakan samaada asid, alkali atau neutral di dalam kotak yang disediakan berdasarkan sifat bahan tersbut.

[3 marks]

3 (a)

(b) Alkali can be neutralized by adding acid into it. State the pH value of the product of neutralization.
Alkali boleh dineutralkan dengan menambahkan asid kepadanya. Nyatakan nilai pH hasil peneutralan.

.....

[1 mark]

3 (a)

(c) State the property of slaked lime. Why is it to the acidic soil?
Nyatakan sifat kapur mati. Mengapakah ia ditambah ke[pada tanah berasid?

Property of slaked lime: .....
Sifat kapur mati:

[1 mark]

Reason : .....
Alasan

[1 mark]

3 (c)

Total

5. Diagram 5.1 shows a menstrual cycle
Rajah 5.1 menunjukkan satu kitar haid

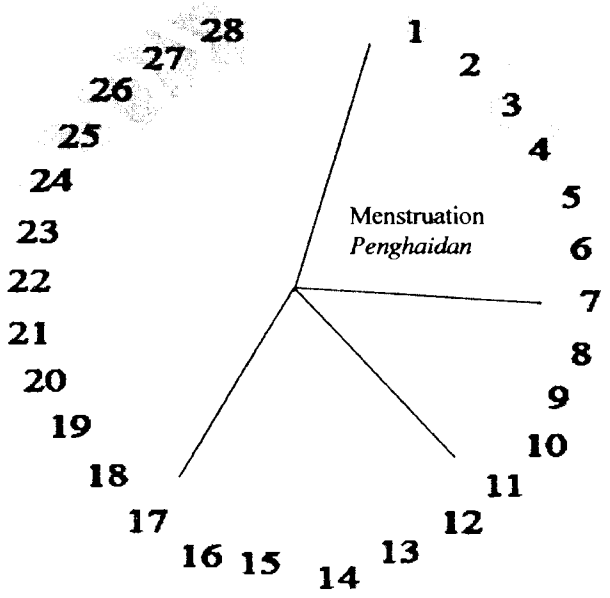


Diagram 5.1
Rajah 5.1

(a) How long is the menstrual cycle?
Berapa lamakah tempoh kitar haid?

.....

[1 mark]

5(a)

(b) (i) Name the phase when ovary produces an ovum?
Namakan fasa apabila ovari menghasilkan satu ovum?

.....

[1 mark]

5(b)(i)

(ii) Shade the area on Diagram 5.1 to show the phase in (b) (i)
Lorekkan pada Rajah 5.1 untuk menunjukkan fasa dalam(b)(i)

[1 mark]

5(b)(ii)

(c) What happens to the lining of the uterus wall during menstruation?
Apakah terjadi kepada lapisan dinding uterus semasa penghaidan?

.....

.....

[1 mark]

5(c)

(d) Table 5.2 shows the calendar for July 2009

Jadual 5.2 menunjukkan calendar bagi bulan Julai 2009.

JULY 2009

JULAI 2009

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	

Table 5.2
Jadual 5.2

(i) A girl has her first day of menstruation on the 7th of July. When is her next menstruation?
Seorang budak perempuan mengalami hari pertama haid pada 7hb Julai. Bilakah tarikh haid seterusnya?

.....

[1 mark]

5(d)(i)

(ii) Circle the date on the calendar to show the ovulation process of this girl.
Bulatkan tarikh di atas kalendar bagi menunjukkan prosess pengovulan budak perempuan ini

[1 mark]

5(d)(ii)

(e) If a married couple wants to carry out natural family planning, state the method and explain how
Iika sepasang suami ister ingin mengamalkan perancangan keluarga semulajadi nyatakan kaedah dan terangkan bagaimana..

Method/ *Kaedah*: .....

[1 mark]

Explain /*Penerangan:* .....

[1 mark]

5(e)

Total

6. Diagram 6.1 shows a wire carrying an electric current.
Rajah 6.1 menunjukkan satu litar elektrik.

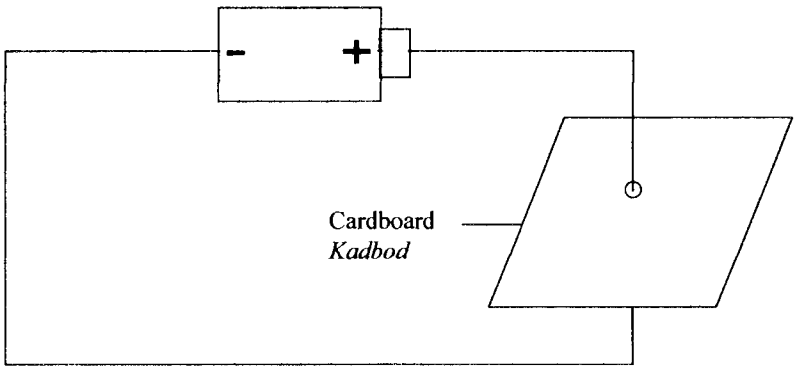


Diagram 6.1
Rajah 6.1

6(a)(i)

(a) (i) Draw the arrow (⟶) to show the direction of current on diagram 6.1
Lukiskan anak panah (⟶) untuk menunjukkan arah arus yang mengalir pada Rajah 6.1

[1 mark]

(ii) Draw the magnetic field lines and its direction on the cardboard in diagram 6.1
Lukiskan garisan medan magnet dan arahnya di atas kadbod pada rajah 6.1

6(a)(ii)

[2 marks]

(b) State the rule that can be used to determine the direction of magnetic line.
Nyatakan peraturan yang boleh digunakan untuk menentukan arah medan magnet.

.....

6(b)

[1 mark]

(c) Diagram 6.2 shows a simple electromagnet
Rajah 6.2 menunjukkan electromagnet ringkas

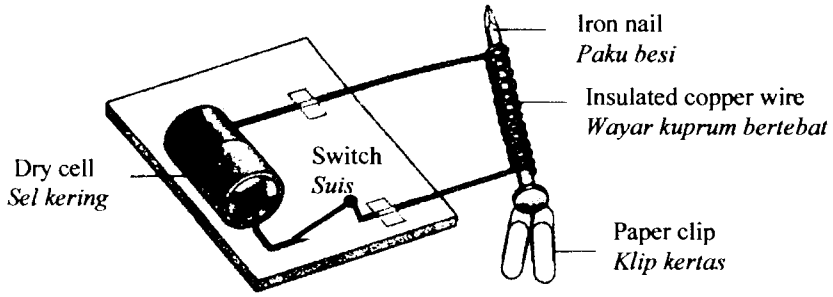


Diagram 6.2
Rajah 6.2

(i) What happen to the paper when the switch is off.
Apakah yang terjadi kepada kertas apabila suis dimatikan.

.....
[1 mark]

6(c)(i)

(ii) Explain your answer.
Terangkan jawapan anda.

.....
[1 mark]

6(c)(ii)

(d) Give **two** devices that use principle of electromagnet.
*Berikan **dua** contoh alat yang menggunakan prinsip electromagnet.*

(i).....

(ii).....
[2 marks]

6(d)

Total

Section B
[20 marks]

Answer **all** questions.
The time suggested to complete this section is 30 minutes.

7. Diagram 7 shows an activity to study eletrical conductivity of some substances.
Rajah 7 menunjukkan satu aktiviti untuk mengkaji kekonduksian elektrik ke atas beberapa bahan

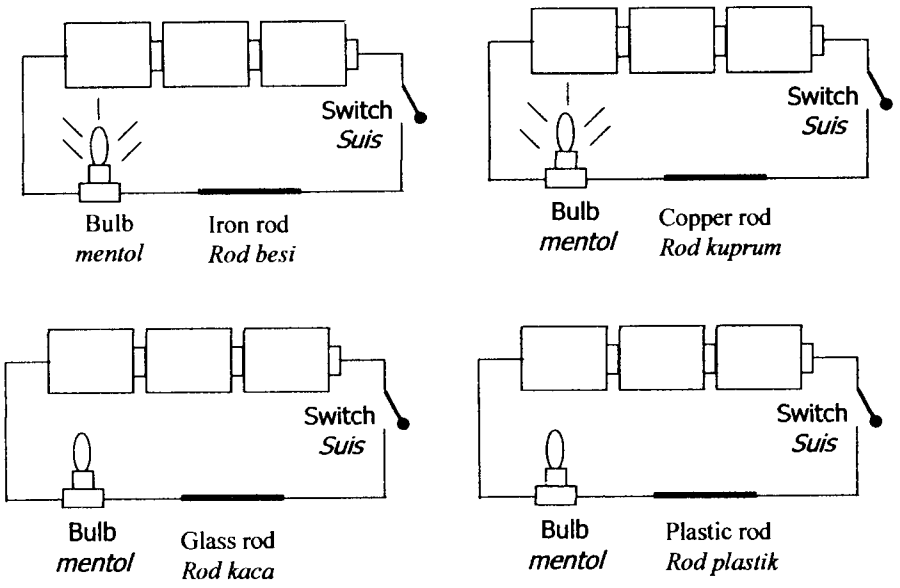


Diagram 7
Rajah 7

(a) Based on the observation in the activity, complete table 7.1
Berdasarkan pemerhatian ke atas aktiviti, lengkapkan jadual 7.1

Substances **Bahan**	**Observation** ***Pemerhatian***
Iron rod *Rod besi*	Bulb lights up *Mentol menyala*
Copper rod *Rod kuprum*	
Glass rod *Rod kaca*	Bulb does not light up *Mentol tidak menyala*
Plastic rod *Rod plastik*	

[2 marks]

Table 7.1

7(a)

(b) Based on the observation in table 7.1, state characteristics of the substances
Berdasarkan pemerhatian di dalam jaduial 7.1, nyatakan ciri bahan berikut

7(b)

Iron rod : .....
Rod besi

Plastic rod : .....
Rod plastik

[2 marks]

(c) Based on your observation in Table 7.1classify the substance into two groups according to the ability to conduct electricity
Berdasarkan pemerhatian pada jadual 7.1 kelaskan bahan kepada dua kumpulan mengikut keupayaan untuk mengkonduksikan elektrik

Iron rod, copper rod, glass rod, plastic rod
Rod besi, rod kuprum, rod kaca, rod plastik

Common characteristics
Ciri sepunya

Name of substances
Nama bahan

7(c)

[4 marks]

(d) State the inference of the activity
Nyatakan inferens aktiviti ini.

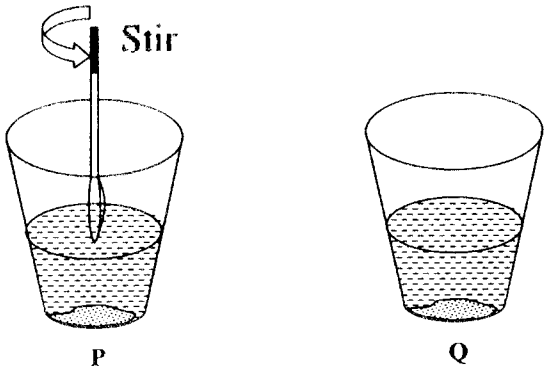
.....

[1 mark]

7(d)

Total

8 (a) Diagram 8.1 shows two glasses of water P and Q containing some sugar
Rajah 8.1 menunjukkan dua gelas air, P dan Q yang mengandungi gula



P is stirred
P dikacau

Q is not stirred
Q tidak dikacau

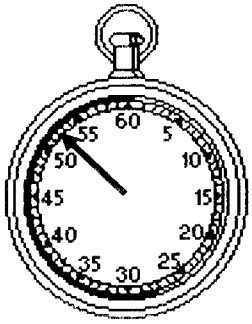
Diagram 8.1
Diagram 8.1

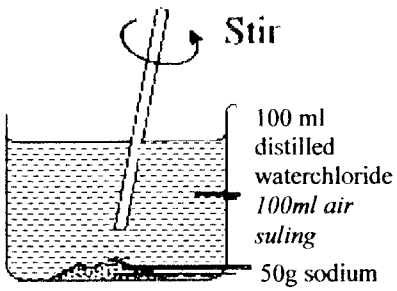
State **one** inference about the sugar in the glass
*Nyatakan **satu** inferens mengenai gula di dalam gelas.*

.....

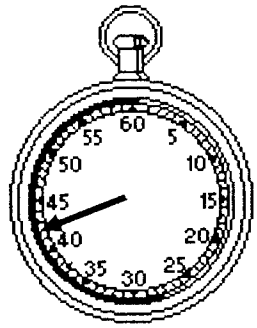
[1 mark]

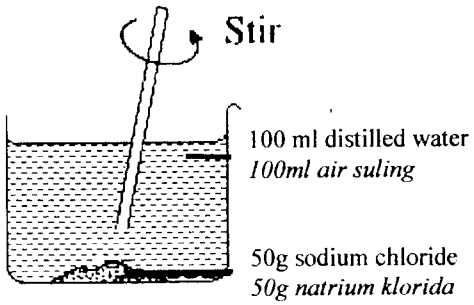
(b) Diagram 8.2, shows an experiment to study the effect of temperature on the rate of solubility of sodium chloride . Each mixture is stirred at the same rate.
Rajah 8.2 menunjukkan satu eksperimen untuk mengkaji kesan suhu terhadap kadar keterlarutan natrium klorida . Setiap campuran dikacau pada kadar yang sama.



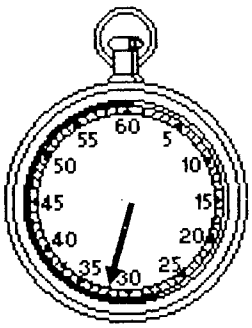


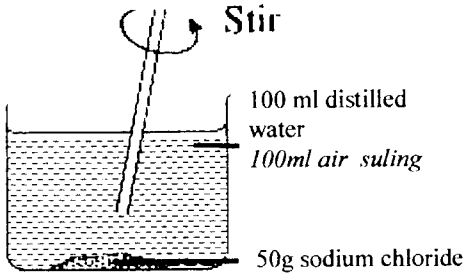
Tempereatue of 40 ^{0}C
Suhu air 40 ^{0}C





Tempereatue of 60 ^{0}C
Suhu air 60 ^{0}C





Tempereatue of 80 ^{0}C
Suhu air 80 ^{0}C

Diagram 8.2
Diagram 8.2

(i) State the variables in this experiment.

Nyatakan pembolehubah dalam eksperimen ini

Manipulated variable *Pembolehubah dimanipilasi*	.....
Responding variable *Pembolehubah bergerakbalas*	.....
Fixed variable *Pembolehubah malar*	.....

[3 marks]

7 (b)(i)

(ii) Complete the time taken for sodium chloride to dissolve in each beaker in Table 8.2.
Lengkapkan masa yang diambil bagi natrium klorida larutdi dalam di dalam jadual 8.2

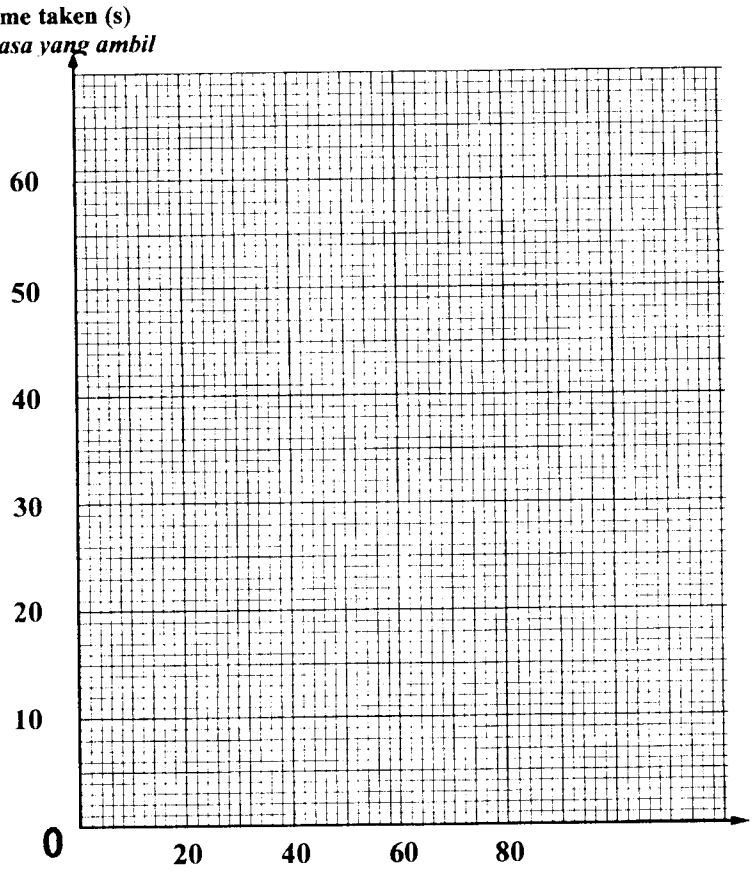
Temperature of water (^{0} C) ***Suhu air***	**Time taken for sodium chloride to dissolve (s)** ***Masa yang diambil bagi natrium klorida larut***
20	62
40	
60	
80	32

Table 8.2

7(b)(ii)

[2 marks]

(c) Based on Table 8.2, plot a graph time taken for sodium chloride to dissolve against temperature of water
Berdasarkan jadual 8.2, plotkan graf masa yang diambil untuk natrium klorida larut melawan suhu air



7(c)

[2 marks]

(d) Based on your graph, predict the time taken for sodium chloride to dissolve if the temperature of water is 50 ^{0} C
Berdasarkan graf anda, ramalkan masa yang diambil bagi natrium klorida larut jika suhu air adalah 50 ^{0} C

7(d)

.....
[1 mark]

(e) State the relationship between the temperature of water and the time taken for sodium chloride to dissolve.
Nyatakan hubungan antara suhu air dengan masa yang diambil untuk natrium klorida larut

7(e)

.....
(1 mark)

(f) Define operationally 'the rate of solubility'?
Definisikan secara operasi 'kadar keterlarutan'?

7(f)

.....
(1 mark)

Total

END OF QUESTION PAPER

MARKING SCHEME
PAPER 1
SCIENCE

1	B
2	B
3	C
4	D
5	~~B~~ D
6	C
7	D
8	B
9	B
10	A
11	D
12	A
13	C
14	D
15	B
16	D
17	C
18	C
19	D
20	A

21	B
22	C
23	D
24	C
25	D
26	A
27	D
28	D
29	C
30	D
31	B
32	A
33	C
34	A
35	D
36	B
37	A
38	A
39	A
40	C

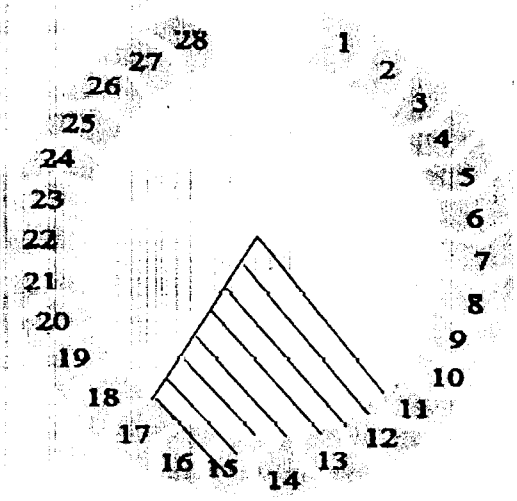
MARKING SCHEME
PAPER 2
SCIENCE

Question No.	Criteria	Marks	Total
1	(a) Student is able to label the structures P : Semi-circular canal *Salur separuh bulat* Q; Cochlea *Koklea* R : Eardrum *Gegendang telinga*	1 1 1	3
	(b) Student is able to name Semi-circular canal *Salur separuh bulat* * do not accept Eustachian tube because it is not labelled in diagram 1.1	1	1
	(c) Student is able to match parts and functions Cochlea *Koklea* → Vibrates when receives sound waves *Bergetar apabila menerima gelombang bunyi* Eardrum *Gegendang telinga* → Detects vibrations and changes into impulses *Mengesan getaran bunyi dan menukarkan kepada impuls* Send impulses to the brain *Menghantar impuls ke otak*	1 1	2
			Total 6

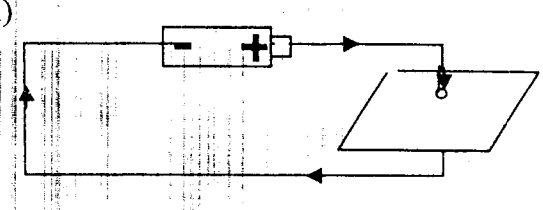
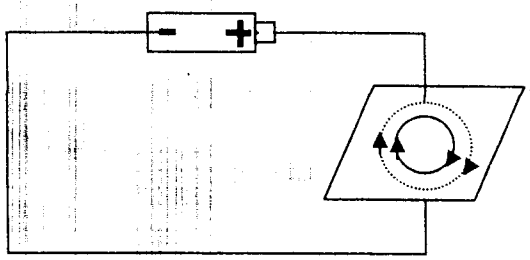
Question No.	Criteria	Marks	Total
2	(a) Student is able to state the forms of energy at P Potential energy *Tenaga keupayaan*	1	1
	(b) Student is able state the point and give reason (i) Q	1	
	(ii) Q is at the lowest (position) *Q (berada pada kedudukan) paling rendah* or The potential energy changes to kinetic energy as the velocity of the ball bearing increases *Tenaga keupayaan bertukar kepada tenga kinetik apabila halaju alas bebola semakin meningkat.*	1	2
	(c) Student is able to state the point S	1	1
	(d) Student is able to write energy changes involved (i) Radio : Electrical energy ⟶ sound energy *Tenaga elektrik ⟶ tenaga bunyi*	1	
	(ii) Toaster: Electrical energy ⟶ heat energy *Tenaga elektrik ⟶ tenaga haba*	1	2
	* both energy must be written correctly and ⟶ the must be correct * accepted if student write 'change to' and not ⟶		
		Total 6	Total 6

Question No.	Criteria	Marks	Total
3	(a) Student is able to give reason - (Respiration) gives/ [redacted]s *(Respirasi) memberikan/menghasilkan tenaga bagi benda hidup* or - (respiration) releases/ gives out carbon dioxide *(Respirasi) membebaskan karbon dioksida*	1	1
	(b) Student is able explain why (To) absorb carbon dioxide *(untuk) menyerap karbon dioksida*	1	1
	(c) Student is able to state the indicator in test tube and give reason (i) P Reason : suggested answers (ii) Living cockroach uses oxygen during respiration *Lipas hidup menggunakan oksigen semasa respirasi / pernafasan* or Boiling tube P contains living cockroach/ living things/ animal/ insect that carries out respiration *Tabung didih P mengandungi lipas hidup/ benda hidup/ haiwan/serangga yang melakukan respirasi* or Less oxygen in test tube because it is used by living cockroach and carbon dioxide dissolve in sodium hydroxide lower the air pressure inside the boiling tube *Oxygen berkurangan dalam tabung didih P kerana digunakan oleh lipas dankarbon dioksida larut di dalam natrium hidroksida merendahkan tekanan di dalam tabung didih*	1 1	2
	(d) Student is able to write the gas used and gas released during respiration Oxygen Oksigen Carbon dioxide *Karbon dioksida*	1 1	2
		Total 6	Total 6

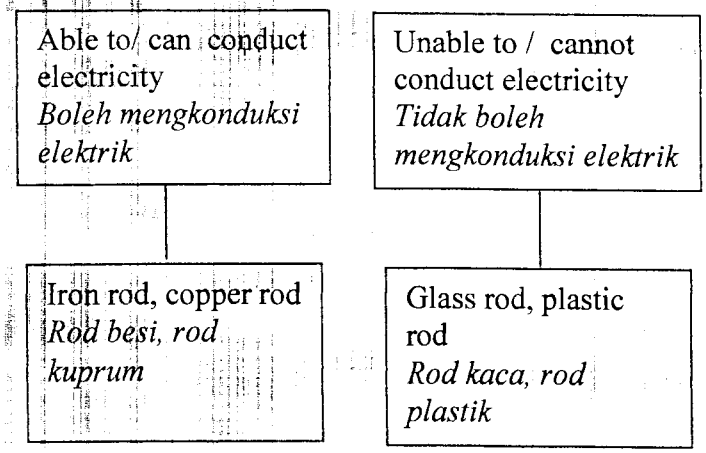
Question No.	Criteria	Marks	Total
4	(a) Student is able to state the properties of substances		
	Toothpaste : alkali *Ubat gigi : alkali*	1	
	Mineral water : neutral *Air mineral : neutral*	1	3
	Vinegar : Acid *Cuka makan : asid*	1	
	(b) Student is able state the pH		
	pH 7	1	1
	(c) Student is able to state the property and give reason		
	i. Slaked lime is alkaline Kapur mati adalah beralkali	1	
	ii. To reduce / lessen acidity of the soil *Mengurangkan keasidan tanah*	1	2
	*do not accept neutralize soil *tidak terima meneutralkan tanah*		
		Total 6	Total 6

Question No.	Criteria	Marks	Total
5	(a) Student is able to state the period of menstrual cycle 28 days *28 hari*	1	1
	(b) Student is able name the phase and shade the area (i) Fertile phase *Fasa subur*	1	2
	(ii)  Accept any type of shading	1	
	c) Student is able to state what happens to the lining (The lining of uterus wall) breaks off / shed and disharge out with a little blood and unfertilized ovum) *Lapisan dinding uterus tertanggal/ luruh/terurai dan disingkirkan keluar (bersama-sama sedikit darah dan ovum yang tidak disenyawakan)*	1	1
	(d) Student is able to state the date of menstruation and circle the date of ovulation (i) 4th August 2009 *4 Ogos 2009*	1	2
	(ii) circle 20th August * Accept any mark as long as it shows correct date	1	

	(e) Student is able to name the natural method and explain		
	(i) Rhythm method Kaedah ritma	1	2
	(ii) prevent/ avoid corpulation/ sexual intercourse during fertile phase *Mengcegah/mengelakkan persetubuhan semasa fasa subur* or temperature method *kaedah suhu* the wife checks on her body temperature daily *isteri merekodkan suhu badan harian* or mucus method *kaedah mucus/lendir* Checks on the mucus where by if more mucus produced is more often it is about to occur ovulation *memeriksa lendir atau mucus dimana lebih banyak mucus dihasilkan apabila pengovulan semakin hampir* 1 mark for correct method and 1 mark for correct explaination	1	
		Total 8	Total 8

Question No.	Criteria	Marks	Total
6	(a) Student is able to draw the direction of current (i)  Accept at any point (one arrow is enough)	1	1
	(ii)  • 1 mark for correct magnetic lines (accept one line/ dotted line) • 1 mark for correct direction (accept I arrow)	1 1	2
	b) Student is able state the rule Right hand grip rule *Peraturan genggaman tangan kanan*	1	1
	c) Student is able to state what happens to the paper clip (i) drop off/ fall down/ will not be attracted *Jatuh / tidak tertarik*	1	
	(ii) iron nail has lost its magnetism//iron nail is not an electromagnet because current does not flow through it/ there is no current flow *Paku besi hilang kemagnetan//tidak menjadi elektromagnet kerana tiada arus mengalir melaluinya*	1	2
	(d) Student is able to give examples Suggested answer (i) electric bell *Loceng elektrik* (ii) Telephone earpiece *Gagang telinga telefon*	1 1	2
			Total

	(iii) Electromagnet crane *Kren elektromagnet* (iv) Car horns Hon kereta * any two correct suitable examples		**8**
Question No.	Criteria	Marks	Total
7	(a) Student is able to state the observation Copper rod : Bulb lights up *Mentol menyala* Plastic rod : Bulb does not light up *Mentol tidak menyala* (b) Student is able characteristic of substances Iron rod : can conduct electric / good conductor of electricity / enable current to flow konduktor elektrik *boleh mengkonduksi elektrik/ konduktor elektrik yang baik/membenarkan arus mengalir* Plastic rod : cannot conduct electric / poor conductor of electricity/ disable current to flow *tidak mengkonduksi elektrik/ konduktor elektrik yang lemah/ tidak membenarkan arus mengalir* (c) Student is able to classify and name the substances Sample answer Good conductor of electricity *Konduktor elektrik yang baik* Iron rod, copper rod *Rod besi, rod kuprum* Poor conductor of electricity *Konduktor elektrik yang lemah* Glass rod, plastic rod *Rod kaca, rod plastik* or	1 1 1 1 2 2	2 2 4

	 d) ~~(c)~~ Able to write inference Sample answer The ability to conducts electricity depends on the type of substance used *Keupayaan mengkonduksi elektrik bergantung kepada jenis bahan yang digunakan* Conductivity of electricity depends on the type of substance used *Kekonduksian elektrik bergantung kepada jenis bahan digunakan* Different type of substance conduct electricity differently *Bahan berlainan mengkonduksikan elektrik dengan berbeza* Jenis bahan/rod mempengaruhi kekonduksian elektrik	1 Total 9	1 Total 9

<table>
<tr><th>Question No.</th><th>Criteria</th><th>Marks</th><th>Total</th></tr>
<tr><td>8</td><td>
(a) Student is able to state the inference
Sample answer
- Sugar in glass P dissolves faster because it is strirred
Gila di dalam gelas P larut lebih cepat kerana ia dikacau
- Sugar can dissolve faster when it is stirred
Gula lebih cepat larut jika ia dikacau
- Stirring affects the solubility of sugar
Mengacau akan mempengaruhi keterlarutan gula
- solubility of sugar in water depends on the stirring
Keterlartuan gula di dalam bergantung kepada ianya kacau

(b) Student is able state the variables
(i)
<table>
<tr><th>Variables</th><th></th></tr>
<tr><td>Manipulated
Manipulasi</td><td>Temperature of water
Suhu air</td></tr>
<tr><td>Responding
bergerakbalas</td><td>Reading of stop watch// rate of solubility// time taken for sodium chloride to dissolve
Bacaan jam randik// kadar keterlarutan // masa yang diambil natrium klorida untuk larut</td></tr>
<tr><td>Fixed
Malar</td><td>Volume of water // rate of stirring// mass of sodium chloride // size of solute/ sodium chloride
Isipadu air// kadar mengacau // jisim natrium klorida// saiz zat terlarut/ natrium klorida</td></tr>
</table>
(ii) Student able to complete the table

40 ^{0}C - 52 s

60 ^{0}C - 42
</td><td>1

1

1

1

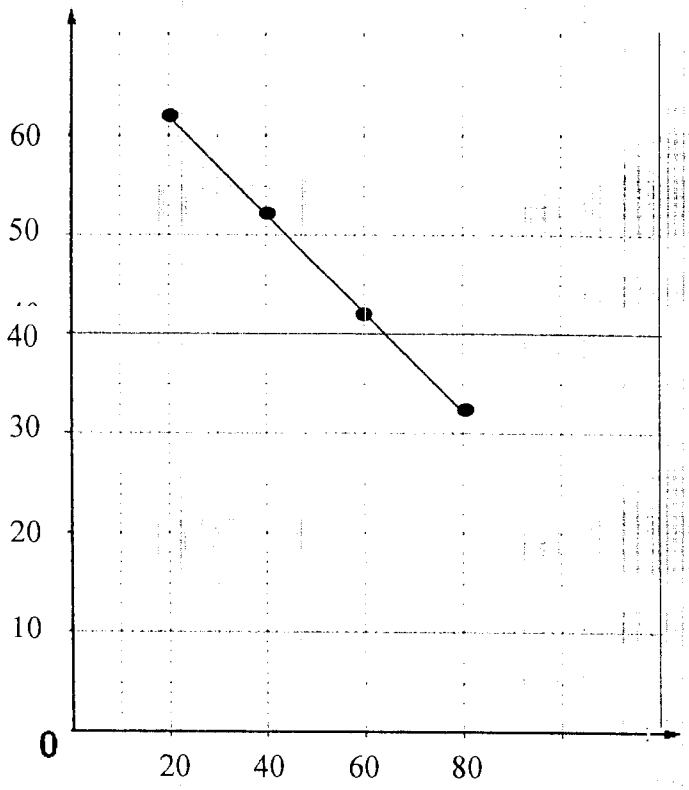
1

1</td><td>1

3

2</td></tr>
</table>

(c) Student is able to draw the graph correctly



1

1

2

Award 2 marks for – all points correct
Correct and smooth graph

Award 1 mark for – 3 points correct
Correct and smooth graph

(d) Student is able to predict correctly either based on the graph or table

47 s

1

1

(e) Student is able to state the relationship between temperature of water and time taken to dissolve

suggested answer

	(i) The higher the temperature of water/ solvent the shorter the time taken for sodium chloride to dissolve *Semakin tinggi suhu air/pelarut semakin pendek masa yang diambil untuk natrium klorida larut* or vice versa (ii) The higher the temperature of water/solvent the higher the rate solubility *Semakin tinggi suhu air /pelarut semakin tinggi kadar keterlarutan* or vice versa (iii) The higher the temperature of water/solvent, the faster sodium chloride dissolve *Semakin tinggi suhu air/ pelarut, semakin cepat natrium klorida larut.* Or vice versa (iv) The temperature of water/ solvent high, sodium chloride dissolve fast/ time taken short/ rate of solubility high *Suhu air/ pelarut tinggi natrium klorida larut cepat/ masa diambil pendek/ kadar keterlarutan tinggi* or vice versa (f) Student is able to define operationally Suggested answer Rate of solubility is shown by the reading of stop watch (when salt/ solute dissolved in water/ solvent) *Kadar keterlarutan adalah ditunjukkan bacaan jam randik (apabila garam/zat terlarut larut di dalam air/pelarut)* Rate of solubility is the time taken (when salt dissolve in water) *Kadar keterlarutan adalah masa yang diambil (apabila garam larut di dalam air)*	1 1 Total 11	1 1 Total 11