

SULIT
Science
Kertas 1
Oktober
2009
 1 ¼ Jam



PEPERIKSAAN SELARAS AKHIR TAHUN TINGKATAN 4
MATA PELAJARAN SAINS DAN MATEMATIK
SEKOLAH-SEKOLAH MENENGAH MELAKA
2009

Kelolaan:
PEJABAT PELAJARAN DAERAH
MELAKA TENGAH* ALOR GAJAH* JASIN

Dengan kerjasama:
JABATAN PELAJARAN MELAKA
JALAN ISTANA BUKIT BERUANG
MELAKA

SCIENCE

Kertas 1

Satu jam lima belas minit

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU

1. *Kertas soalan ini mengandungi 50 soalan.*
2. *Jawab semua soalan.*
3. *Jawab dengan menghitamkan ruangan yang betul pada kertas jawapan.*
4. *Bagi setiap soalan hitamkan satu ruang sahaja.*
5. *Sekiranya anda hendak menukarkan jawapan, padamkan tanda yang telah dibuat. Kemudian hitamkan jawapan yang baru.*
6. *Rajah yang mengiringi soalan tidak dilukis mengikut skala kecuali dinyatakan.*
7. *Anda dibenarkan menggunakan kalkulator saintifik yang tidak boleh diprogram.*

Kertas soalan ini mengandungi 27 halaman bercetak

[Lihat Sebelah]

1. Diagram 1 shows the impulse pathway in nervous coordination.
Rajah 1 menunjukkan laluan impuls dalam koordinasi saraf.

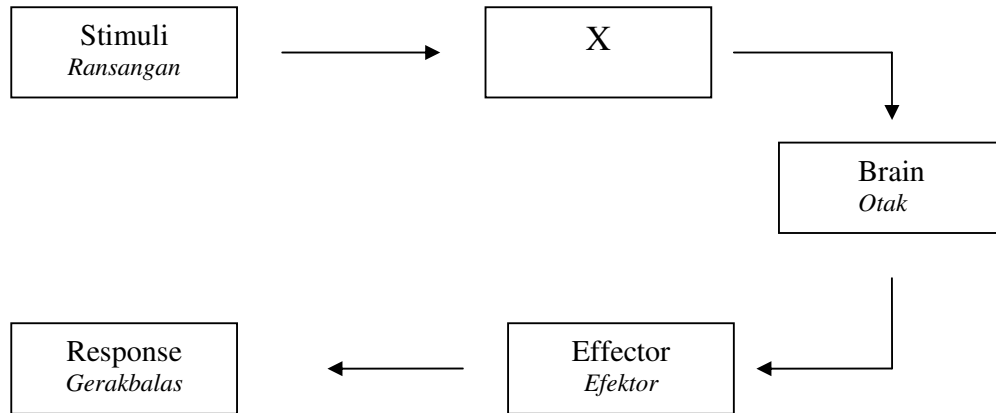


DIAGRAM 1
 RAJAH 1

Which of the following represents X?
Manakah antara berikut mewakili X?

- A. Skin
Kulit
 - B. Brain
Otak
 - C. Muscle
Otot
 - D. Spinal cord
Saraf tunjang
2. Diagram 2 shows the structure of a neuron.
Rajah 2 menunjukkan satu struktur neuron.

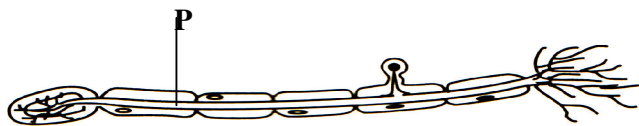


DIAGRAM 2
 RAJAH 2

What is the function of P?

Apakah fungsi P?

- A. To conduct impulse towards the cell body
Membawa impuls menuju ke sel badan
- B. To conduct impulse away the cell body
Membawa impuls keluar dari sel badan
- C. To speeds up the transmission of nerve impulses
Mempercepatkan penghantaran impuls saraf
- D. To control the activities of the cell
Mengawal aktiviti sel

3. Diagram 3 shows a motor neurone.
Rajah 3 menunjukkan neuron motor.

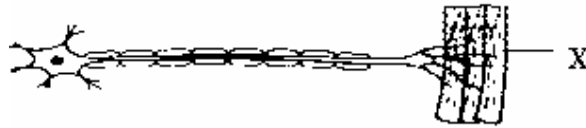


DIAGRAM 3
RAJAH 3

What is the function of X?

Apakah fungsi X?

- A To detect stimulus
Untuk menerima rangsangan
 - B For receiving the information
Untuk menerima maklumat
 - C For interpreting the information
Untuk mentafsirkan maklumat
 - D To contract and relax to produce response.
Untuk mengecut dan mengendur untuk menghasilkan gerak balas
4. Diagram 4 shows the presence of proprioceptors in muscles.
Rajah 4 menunjukkan kehadiran reseptor regang di dalam otot.



DIAGRAM 4
RAJAH 4

Which of the following activities depend on proprioceptors?
 Antara aktiviti berikut, yang manakah bergantung kepada reseptor regang?

- A. Kicking a ball
Menendang bola
- B. Reading a book
Membaca buku
- C. Blowing a whistle
Meniup wisel
- D. Walking on a narrow bar
Berjalan pada titian yang kecil

5 Diagram 5 shows the structure of a human brain
 Rajah 5 menunjukkan struktur otak manusia.

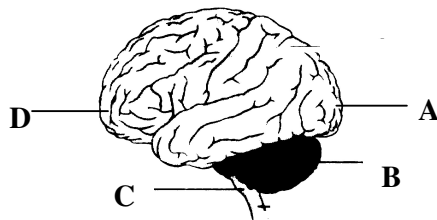


DIAGRAM 5
 RAJAH 5

Which part of the brain controls the heart beat and breathing process?
 Antara berikut, bahagian manakah yang mengawal denyutan jantung dan proses pernafasan?

6. Diagram 6 shows the endocrine glands in the human body.
 Rajah 6 menunjukkan kelenjar endokrin di dalam badan manusia.

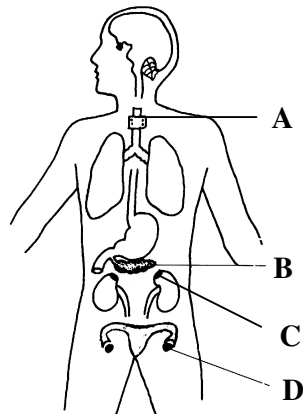


DIAGRAM 6
 RAJAH 6

Which of the following endocrine glands is function when a person facing an emergency situation?

Manakah antara kelenjar endokrin berikut berfungsi semasa seseorang menghadapi situasi cemas?

7. Which of the following statements is **true** about the difference between the nervous coordination and the hormonal coordination?

*Manakah antara pernyataan berikut adalah **benar** mengenai perbezaan antara koordinasi saraf dan koordinasi kimia?*

	Nervous coordination <i>Koordinasi saraf</i>	Hormonal coordination <i>Koordinasi kimia</i>
A	Effects can last longer <i>Kesannya adalah berpanjangan</i>	Effects are temporary <i>Kesannya adalah sementara</i>
B	Affects the target organ <i>Mempengaruhi organ sasaran</i>	Affects the effectors <i>Mempengaruhi efektor</i>
C	Speed of transmission is slower <i>Penghantaran adalah perlahan</i>	Speed of transmission is rapid <i>Penghantaran adalah cepat</i>
D	Messages are carried in the form of electrical impulses <i>Maklumat yang dibawa dalam bentuk impuls elektrik</i>	Messages are carried in the form of chemical substances <i>Maklumat yang dibawa dalam bentuk bahan kimia</i>

8. Which type of drugs can relieve pain and ease mental stress?

Antara jenis dadah berikut, yang manakah boleh melegakan kesakitan dan mengurangkan tekanan mental?

- A. Inhalants
Inhalan
- B. Stimulants
Peransang
- C. Hallucinogens
Halusinogen
- D. Anti-depressants
Anti- depresan

9. Diagram 7 shows a phase in cell division.

Rajah 7 menunjukkan satu peringkat dalam pembahagian sel.



DIAGRAM 7
RAJAH 7

Name the type of cell division

Namakan jenis pembahagian sel ini.

A. Mitosis

Mitosis

B. Meiosis

Meiosis

C. Mutation

Mutasi

D. Fertilisation

Persenyawaan

10. Diagram 8 shows the stages found in mitosis.

Rajah 8 menunjukkan peringkat dalam mitosis.

W - Chromosomes are arranged at the centre of the cell

Kromosom tersusun di tengah sel

X - Chromatid are separated.

Kromatid terpisah

Y - Chromosomes are duplicated.

Penduaan kromosom

Z - Chromosomes thicken

Penebalan kromosom

DIAGRAM 8

RAJAH 8

Which of the following shows the correct sequence of the stages?

Antara berikut, yang manakah adalah susunan yang betul pada peringkat tersebut?

A. X, W, Z, Y

B. Y, Z, X, W

C. W, Z, Y, X

D. Z, Y, W, X

11. Diagram 9 shows a cross breeding between a tall pea plant and dwarf pea plant
Rajah 9 menunjukkan kacukan antara pokok kacang pea tinggi dengan pokok kacang pea kerdil.

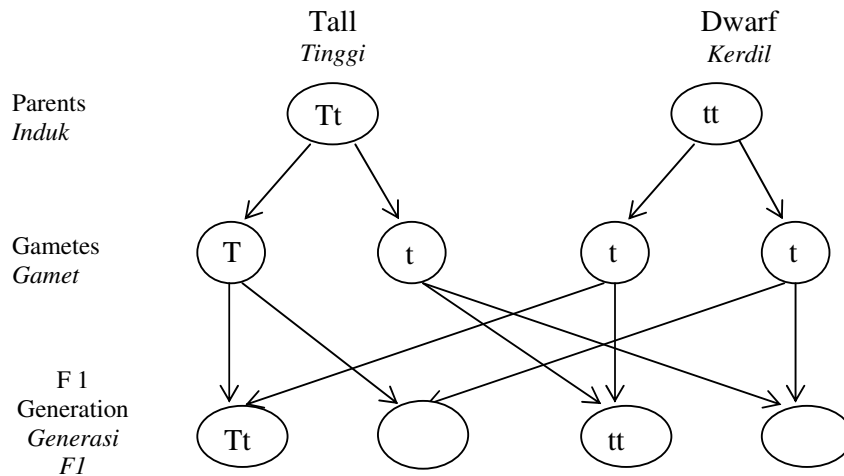


DIAGRAM 9
 RAJAH 9

What is the ratio of the tall plants to the dwarf plants in the first filial generation?
Apakah nisbah pokok tinggi dan pokok kerdil pada generasi pertama?

- A. 1 : 1
 - B. 2 : 1
 - C. 1 : 2
 - D. 3 : 1
12. Diagram 10 shows the ovum fertilised by sperm.
Rajah 10 menunjukkan ovum disenyawakan oleh sperma.

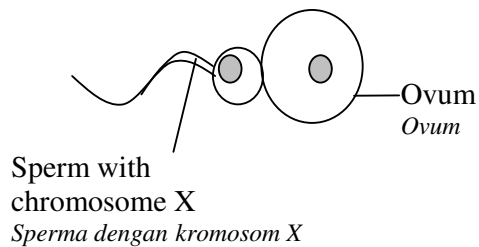


DIAGRAM 10
 RAJAH 10

Which of the following shows the chromosomes that found in this zygote after the fertilisation?

Antara berikut yang manakah menunjukkan kromosom yang terdapat dalam zigot selepas persenyawaan?

- A. 22+X
- B. 22+Y
- C. 44+XX
- D. 44+XY

13. Which of the following is the sex-linked recessive trait?

Manakah antara berikut adalah ciri gen terangkai seks resesif?

- A. Colour blindness
Rabun warna
- B. Down's syndrome
Sindrom down
- C. Turner's syndrome
Sindrom Turner
- D. Klinefelter's syndrome
Sindrom Klinefelter

14. What are the advantages selective breeding is carried out on crops?

Apakah kebaikan bagi proses kacukan terpilih yang dijalankan keatas tanaman?

- I. Decrease the resistance of crops towards diseases
Mengurangkan rintangan penyakit terhadap tanaman
 - II. Maintain the preferable traits
Mengekalkan ciri yang dikehendaki
 - III. Increase the yield
Menambahkan hasil tanaman
- A. I and II
 - B. I and III
 - C. II and III
 - D. I, II and III

15. Which of the following is **true** about identical twins?
*Antara berikut yang manakah **benar** tentang kembar seiras?*

- A Both foetuses share the same placenta.
Kedua-dua fetus berkongsi plasenta yang sama
- B Two ova are fertilized by two sperms.
Dua ovum disenyawakan oleh dua sperma.
- C The sex of this twins are always different.
Jantina bagi kembar ini sentiasa berbeza.
- D They always have different genetic make-up gender.
Mempunyai kandungan gen yang berbeza.

16. Diagram 11 shows the histogram of a certain characteristic of the students in a class.

Rajah 11 menunjukkan histogram bagi ciri tertentu murid dalam sebuah kelas.

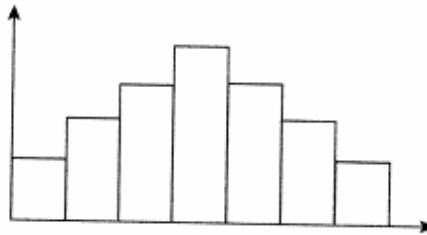


DIAGRAM 11

RAJAH 11

- Which of the following could represent the characteristic?
Manakah antara berikut mewakili ciri tersebut?

- A. Height
Ketinggian
- B. Type of hair
Jenis rambut
- C. Type of earlobe
Jenis lekapan cuping telinga
- D. Ability to roll the tongue
Kebolehan menggulung lidah

17. Diagram 12 shows the arrangement of particles which undergo process Y.
Rajah 12 menunjukkan susunan zarah-zarah yang melalui proses Y.

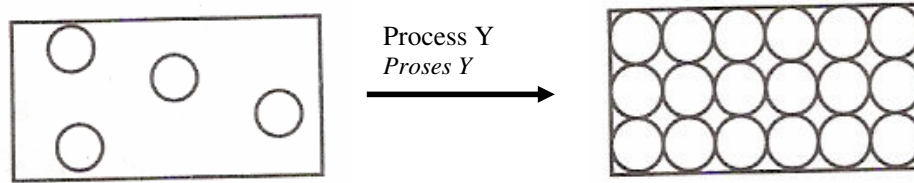


DIAGRAM 12
RAJAH 12

What is process Y?
Apakah proses Y?

- A. Boiling
Pendidihan
 - B. Melting
Pencairan
 - C. Sublimation
Pemejalwapan
 - D. Condensation
Kondensasi
18. Diagram 13 shows a structure of atom X.
Rajah 13 menunjukkan struktur bagi atom X..

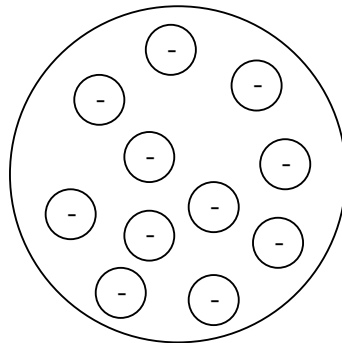


DIAGRAM 13
Rajah 13

Who discovered model X?
Siapakah yang menjumpai model X?

- A. Bohr
- B. Rutherford
- C. J.J. Thomson
- D. James Chadwick

19. Diagram 14 shows the symbol of Ferum element .
Rajah 14 menunjukkan simbol bagi elemen Ferum.

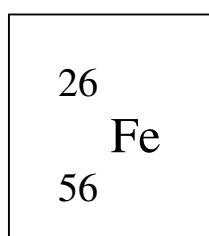


DIAGRAM 14
RAJAH 14

What is the neutron number for this atom?
Apakah nombor neutron bagi atom ini?

- A. 26
 - B. 30
 - C. 56
 - D. 82
20. Diagram 15 shows a periodic table.
Rajah 15 menunjukkan satu jadual berkala.

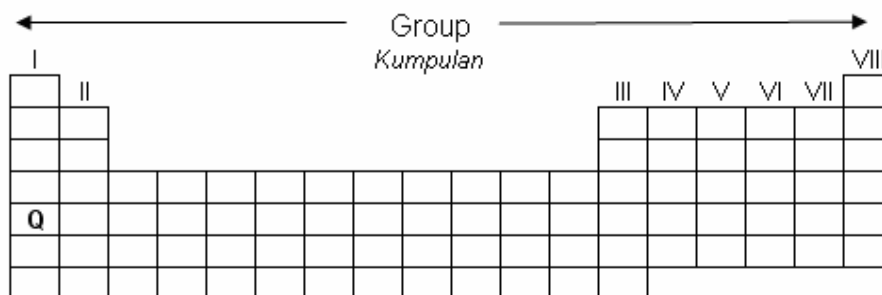


DIAGRAM
RAJAH 15

What is element Q?

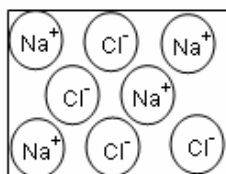
Apakah unsur Q?

- A. Iodin
Iodin
- B. Sodium
Natrium
- C. Helium
Helium
- D. Sulphur
Sulfur

21. Which of the substance is an ionic compound?

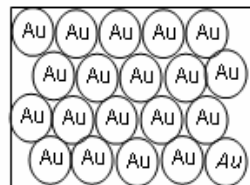
Yang mana satukah adalah sebatian ion?

A.



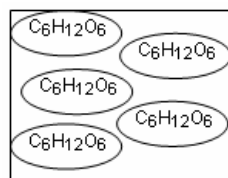
Sodium Chloride
Natrium Klorida

B.



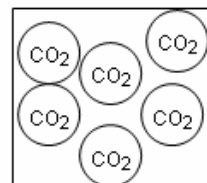
Gold
Emas

C.



Glucose
Glukosa

D.



Carbon dioxide
Karbon dioksida

22. Diagram 16 shows a physical property of metal.

Rajah 16 menunjukkan ciri fizikal bagi logam.

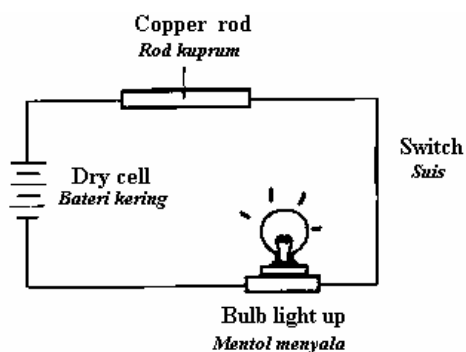


DIAGRAM 16
RAJAH 16

What is the physical property represent above?

Apakah ciri fizikal yang diwakili di atas?

- A. Metal is poor conductor of electric
Logam adalah konduktor elektrik yang lemah
- B. Metal is good conductor of electric
Logam adalah konduktor elektrik yang baik
- C. Metal has low boiling point
Logam mempunyai takat didih yang rendah
- D. Metal has low melting point
Logam mempunyai takat lebur yang rendah

23. The following information shows the characteristics and uses of material P.
Maklumat berikut menunjukkan ciri-ciri dan kegunaan bahan P.

- Can be easily bend and shaped
Mudah dibengkokkan dan dibentuk
- Ductile and malleable
Mulur dan mudah ditempa
- Uses as electrical wires
Digunakan sebagai wayar elektrik

What is material P ?

Apakah bahan P ?

- A. Iron
Besi
- B. Copper
Kuprum
- C. Carbon
Karbon
- D. Aluminium
Aluminium

24. Diagram 17 shows a method of purification.
Rajah 17 menunjukkan kaedah penulenan bahan.

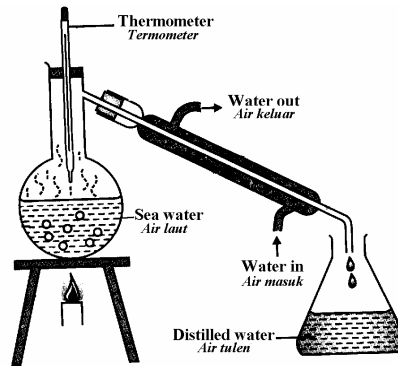


DIAGRAM 17
RAJAH 17

What is the type of purification method ?
Apakah jenis kaedah penulenan tersebut?

- A. Filtration
Penurasan
 - B. Evaporation
Pemejalwapan
 - C. Distillation
Penyulingan
 - D. Crystallization
Penghabluran
25. Diagram 18 shows a model of simple voltaic cell.
Rajah 18 menunjukkan satu model sel ringkas.

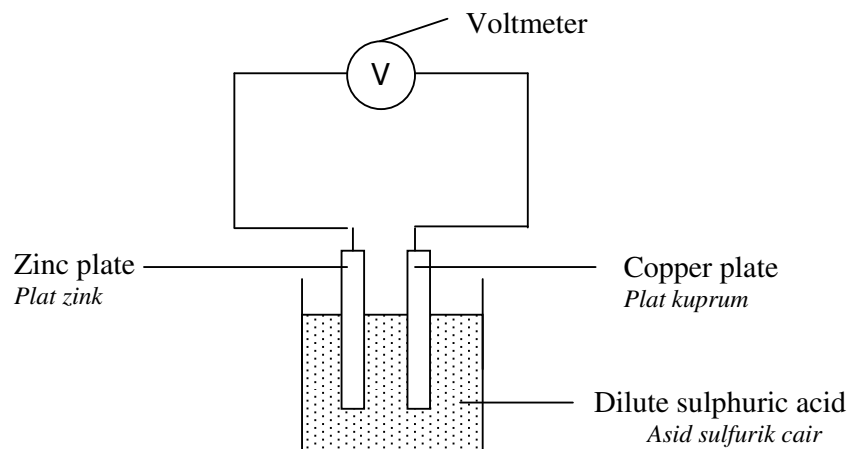


DIAGRAM 18
RAJAH 18

Which of the following is a negative terminal ?
Manakah antara berikut merupakan terminal negatif ?

- A . Voltmeter
Voltmeter
- B. Zinc plate
Kepingan zink
- C. Copper plate
Kepingan kuprum
- D. Dilute sulphuric acid
Asid sulfurik cair

26. Which of the following is an example of a physical change in our daily life.
Yang manakah antara berikut merupakan contoh perubahan fizik dalam kehidupan seharian.

- A. Rusting
Pengaratan
- B. Digestion
Pencernaan
- C. Combustion
Pembakaran
- D. Forming of dew drops
Pembentukan embun

27. Diagram 19 shows the mercury level in a thermometer before and after a small slice of potassium is placed on the surface of water in a beaker.
Rajah 19 menunjukkan aras merkuri pada termometer sebelum dan selepas sebutir kalium dimasukkan ke dalam bikar yang mengandungi air.

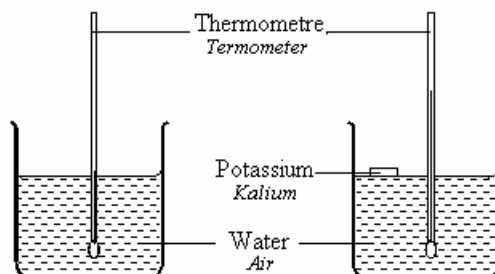


DIAGRAM 19
RAJAH 19

Name the reaction involved in this experiment?
Namakan tindak balas yang berlaku dalam eksperimen ini ?

- A Neutralization
Peneutralan
- B Physical reaction
Tindak balas fizik
- C Exothermic reaction
Tindak balas eksotermik
- D Endothermic reaction
Tindak balas endotermik

28. Diagram 20 shows a reaction between calcium with water.
Rajah 20 menunjukkan tindak balas di antara kalsium dengan air.

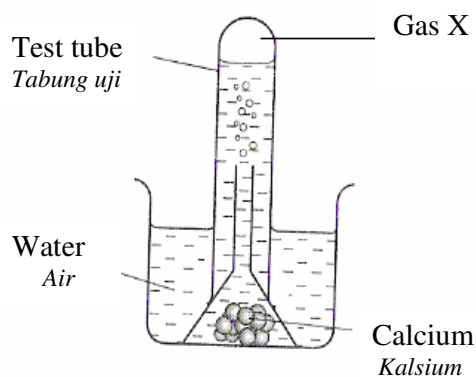


DIAGRAM 20
RAJAH 20

What is gas X?
Apakah gas X?

- A. Chlorine
Klorin
- B. Oxygen
Oksigen
- C. Nitrogen
Nitrogen
- D. Hydrogen
Hidrogen

29. Diagram 21 shows the position of metal Q in the reactivity series of metal.
Rajah 21 menunjukkan kedudukan logam Q dalam siri kereaktifan logam.

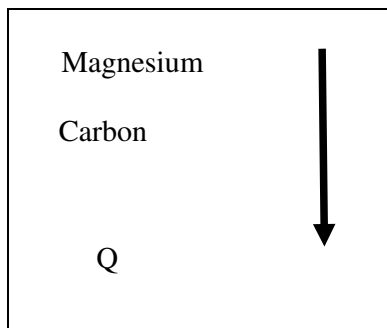
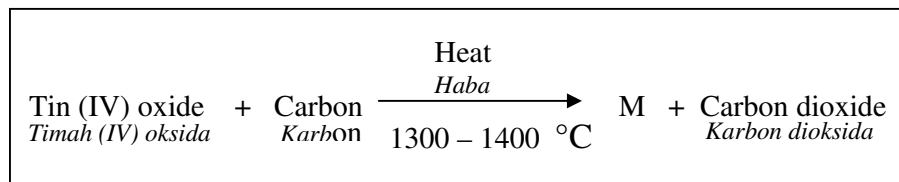


DIAGRAM 21
RAJAH 21

What is Q ?
Apakah Q ?

- A. Calcium
Kalsium
- B. Sodium
Natrium
- C. Copper
Kuprum
- D. Aluminium
Aluminium
30. The word equation below shows the reaction to extract tin (IV) oxide.
Persamaan di bawah menunjukkan tindak balas pengekstrakkan timah (IV) oksida.



What is M?
Apakah M?

- A. Tin
Timah
- B. Iron
Besi
- C. Tin oxide
Timah oksida
- D. Tin and carbon
Timah dan karbon

31. Diagram 22 shows a simple electrolytic cell.
Rajah 22 menunjukkan sel elektrolit ringkas.

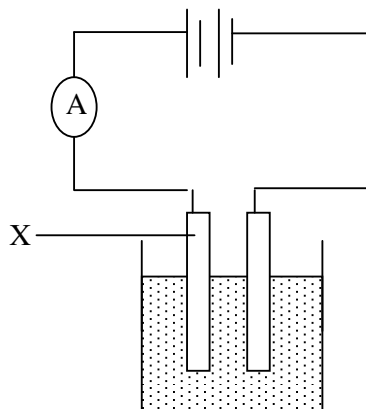


DIAGRAM 22
RAJAH 22

What is X?
Apakah X?

- A. Cathode
Katod
 - B. Cation
Kation
 - C. Anode
Anod
 - D. Anion
Anion
32. Diagram 23 shows one way to store chemical substance.
Rajah 23 menunjukkan satu cara menyimpan bahan kimia.



DIAGRAM 23
RAJAH 23

Why does this chemical substance must be stored as shown above ?
Mengapakah bahan kimia mesti disimpan seperti di atas ?

- A. The chemical substance is sensitive to air
Bahan kimia ini sensitif kepada udara
- B. The chemical substance is sensitive to water
Bahan kimia ini sensitif kepada air
- C. The chemical substance is sensitive to acid
Bahan kimia ini sensitif kepada asid
- D. The chemical substance is sensitive to light
Bahan kimia ini sensitif kepada cahaya
33. Which of the following is a radioactive substance ?
Manakah antara berikut adalah bahan radioaktif ?
- A. Hydrogen – 1
Hidrogen – 1
- B. Oxygen – 16
Oksigen – 16
- C. Cobalt – 60
Kobalt – 60
- D. Carbon – 12
Karbon – 12
34. Diagram 24 shows how radioactive rays penetrate through different materials.
Rajah 24 menunjukkan bagaimana sinaran radioaktif menembusi bahan yang berbeza.

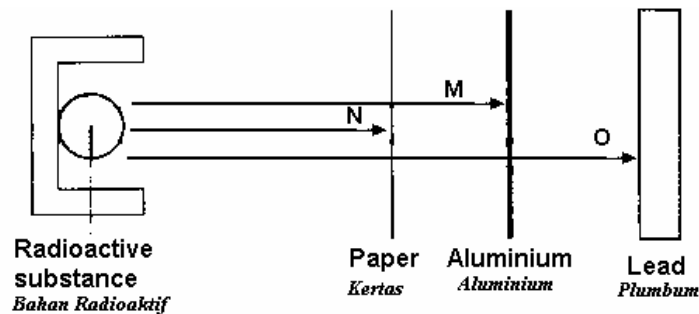
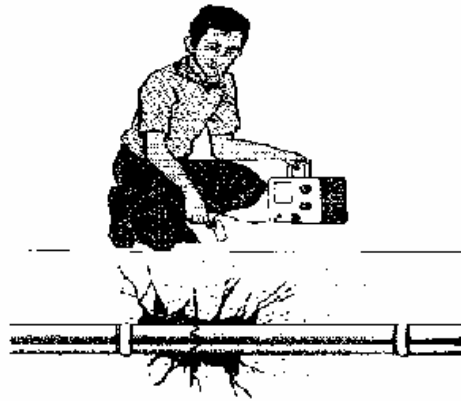


DIAGRAM 24
RAJAH 24

What are rays M, N and O ?
Apakah sinaran M, N dan O ?

- | | | | |
|----|-------|-------|-------|
| | M | N | O |
| A. | Beta | Gamma | Alpha |
| B. | Alpha | Beta | Gamma |
| C. | Gamma | Alpha | Beta |
| D. | Beta | Alpha | Gamma |

35. Diagram 25 shows the use of radioactive substance.
Rajah 25 menunjukkan kegunaan bahan radioaktif.

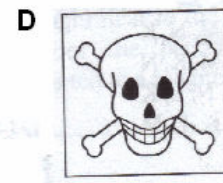
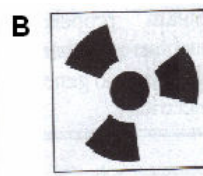


**Tracing leakage of water
 in an underground**
*Mengesan kebocoran air
 di bawah tanah*

DIAGRAM 25
RAJAH 25

Name the device that is used in this situation ?
Namakan alat yang digunakan dalam situasi ini ?

- A. Geiger-Muller tube
Tube Geiger-Muller
- B. Van de Graff
Van de Graff
- C. Galvanometer
Galvanometer
- D. Test tube
Tabung uji
36. Which of the following represent a symbol for radioactive substance ?
Manakah antara berikut mewakili simbol bahan radioaktif ?



37. Diagram 26 shows the image of a student in a plane mirror.
Rajah 26 menunjukkan imej seorang pelajar di dalam cermin satah.

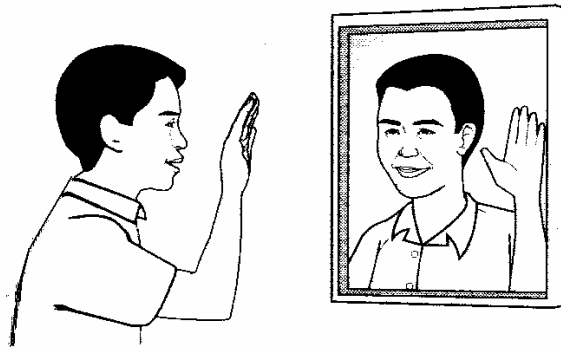


DIAGRAM 26
 RAJAH 26

What are the properties of the image formed in the mirror?
Apakah ciri imej yang dibentuk oleh cermin satah ?

- A. Real and inverted
Nyata dan songsang
- B. Virtual and inverted
Maya dan songsang
- C. Real and laterally inverted
Nyata dan songsang sisi
- D. Virtual and laterally inverted
Maya dan songsang sisi
38. Diagram 27 shows a ray diagram.
Rajah 27 menunjukkan rajah sinar.

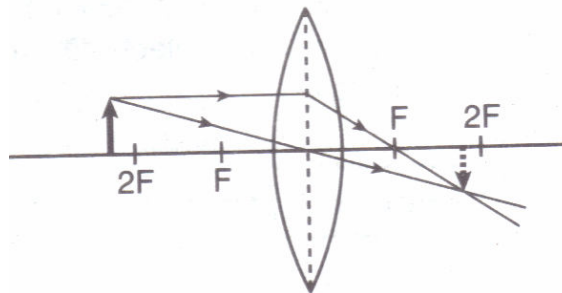


DIAGRAM 27
 RAJAH 27

Which optical instrument uses the principle shown in the ray diagram?

Manakah alat optik berikut menggunakan prinsip seperti yang ditunjukkan dalam rajah sinar?

- A. Camera
Kamera
- B. Periscope
Periskop
- C. Telescope
Teleskop
- D. Magnifying glass
Kanta pembesar

39. Diagram 28 shows the structure of a periscope.
Rajah 28 menunjukkan struktur sebuah periskop.

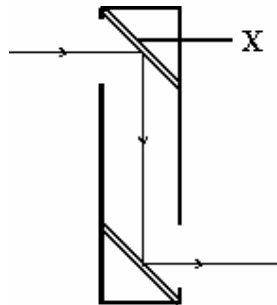


DIAGRAM 28
RAJAH 28

What is X?
Apakah X ?

- A. Film
Filem
- B. Lens
Kanta
- C. Diaphragm
Diaphragma
- D. Plane mirror
Cermin satah

40. Diagram 29 shows the arrangement of apparatus to study the dispersion of light.
Rajah 29 menunjukkan susunan radas untuk mengkaji penyebaran cahaya.

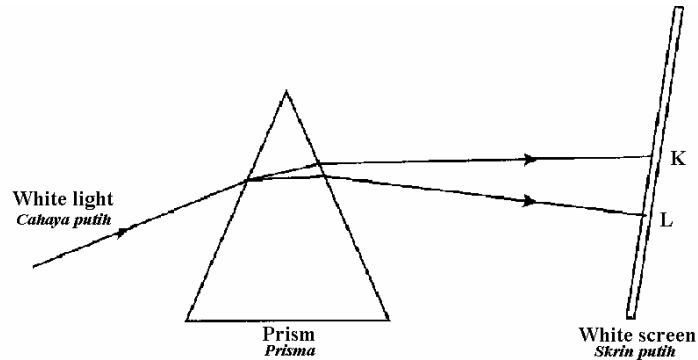


DIAGRAM 29
 RAJAH 29

Which of the following best represents K and L?
Manakah antara berikut menunjukkan K dan L ?

- | | | |
|----|-----------------------|-----------------------|
| | K | L |
| A. | Purple
<i>Ungu</i> | Red
<i>Merah</i> |
| B. | Red
<i>Merah</i> | Purple
<i>Ungu</i> |
| C. | Blue
<i>Biru</i> | Orange
<i>Oren</i> |
| D. | Red
<i>Merah</i> | Blue
<i>Biru</i> |
41. Which of the following phenomena is caused by the scattering of light?
Manakah antara fenomena berikut disebabkan oleh penyerakan cahaya ?
- A. The formation of rainbow
Pembentukan pelangi
- B. The blue sky during the day
Langit kelihatan biru pada waktu tengah hari
- C. Blue coloured object appears dark in red light.
Warna biru objek kelihatan gelap dalam cahaya merah.
- D. The depth of water in a pond appears shallower.
Air yang dalam di dalam kolam kelihatan cetek.

42. Diagram 30 shows the addition of three coloured light.
Rajah 30 menunjukkan penambahan tiga warna cahaya.

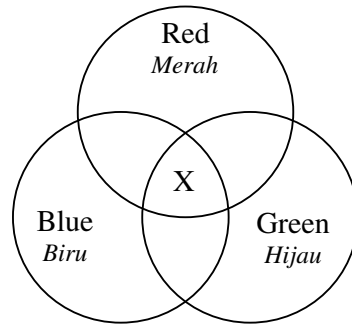


DIAGRAM 30
RAJAH 30

- What colour is X?
Apakah warna X ?
- A. White
Putih
 - B. Blue
Biru
 - C. Black
Hitam
 - D. Red
Merah
43. If a blue shirt appears black under a light P. What is the colour of light P?
Jika baju biru kelihatan hitam di bawah cahaya P. Apakah warna cahaya P ?
- A. Blue
Biru
 - B. Cyan
Sian
 - C. Yellow
Kuning
 - D. Magenta
Magenta

44. Diagram 31 shows a ray of white light passing through two coloured filters.
Rajah 31 menunjukkan sinaran cahaya putih melalui dua penapis warna.

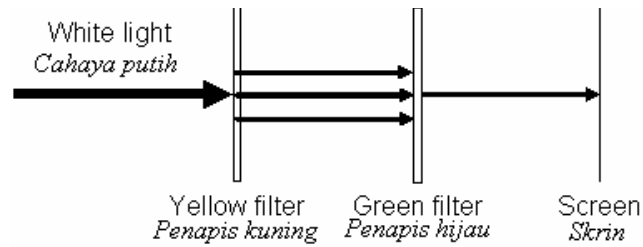


DIAGRAM 31
 RAJAH 31

What colour will be seen on the screen.
Apakah warna yang akan dilihat pada skrin ?

- A. Red
Merah
- B. Blue
Biru
- C. Green
Hijau
- D. Yellow
Kuning
45. Which of the following mixing pigments will produce a green colour?
Manakah antara berikut campuran pigmen yang akan menghasilkan warna hijau ?
- A. Red and blue
Merah dan biru
- B. Red and green
Merah dan hijau
- C. Yellow and blue
Kuning dan biru
- D. Red and yellow
Merah dan kuning
46. Diagram 32 shows the atomic structure of a substance.
Rajah 32 menunjukkan struktur atom suatu bahan.

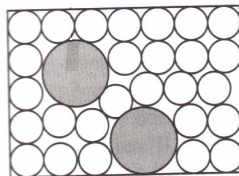


DIAGRAM 32

RAJAH 32

Which of the following substances has the same atomic structure?
Manakah antara bahan berikut mempunyai struktur atom yang sama ?

- A. Iron
Besi
- B. Steel
Keluli
- C. Copper
Kuprum
- D. Aluminium
Aluminium

47. Diagram 33 shows a type of transportation.
Rajah 33 menunjukkan satu jenis kenderaan.

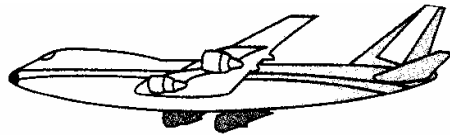
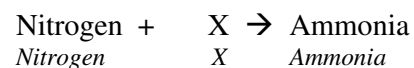


DIAGRAM 33
RAJAH 33

Which of the following alloys is suitable to make the framework of this transportation?
Manakah antara aloi berikut sesuai digunakan untuk membuat rangka kenderaan ini ?

- A. Brass
Loyang
- B. Steel
Keluli
- C. Bronze
Gangsa
- D. Duralumin
Duralumin

48. The information shows a word equation for making ammonia.
Maklumat menunjukkan persamaan perkataan bagi pembuatan ammonia.



What is X?

Apakah X ?

A. Oxygen

Oksigen

B. Hydrogen

Hidrogen

C. Sulphur dioxide

Sulfur dioksida

D. Carbon dioxide

Karbon dioksida

49. Which of the following methods can minimize pollution?

Manakah antara berikut kaedah yang boleh mengurangkan pencemaran ?

A. Using pesticides in farms

Menggunakan racun serangga di ladang

B. Open up more land for development project

Membuka lebih banyak kawasan untuk projek pembangunan

C. Discharge the waste water of the factory into the river

Membuang air kumbahan kilang ke dalam sungai

D. Encourage the use of biological control to control pests

Menggalakkan penggunaan kawalan biologi untuk mengawal haiwan perosak

50. The information shows the effect of gas P to the human.

Maklumat menunjukkan kesan gas P kepada manusia.

Reacts with hemoglobin in blood and stops it from carrying oxygen to body cells

Bertindak balas dengan hemoglobin di dalam darah dan menghalang pengangkutan oksigen ke sel badan

Name gas P.

Namakan gas P.

A. Carbon dioxide

Karbon dioksida

B. Sulphur dioxide

Sulfur dioksida

C. Nitrogen dioxide

Nitrogen dioksida

D. Carbon monoxide

Karbon monoksida

END OF QUESTION PAPER

1511/2
Sains
Kertas 2
Okt
2009
2 ½ jam



Nama

Tingkatan

**PEPERIKSAAN SELARAS AKHIR TAHUN TINGKATAN 4
SEKOLAH-SEKOLAH MENENGAH MELAKA
2009**

**Kelolaan:
PEJABAT PELAJARAN DAERAH
ALOR GAJAH * MELAKA TENGAH * JASIN**

SCIENCE

Kertas 2

Dua jam tiga puluh minit

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU

1. Tuliskan nama, angka giliran dan nombor kad pengenalan anda pada ruangan yang disediakan di bahagian atas muka surat ini.
2. Kertas soalan ini mengandungi tiga bahagian: **Bahagian A**, **Bahagian B** dan **Bahagian C**.
3. Jawab **semua** soalan dalam **Bahagian A** dan **Bahagian B**. Bagi **Bahagian C**, jawab **Soalan 1** dan mana-mana **satu** daripada **Soalan 2** atau **Soalan 3**.
4. Jawapan hendaklah ditulis dengan jelas dalam ruangan yang disediakan dalam kertas soalan.
5. Rajah yang mengiringi soalan tidak dilukiskan mengikut skala kecuali dinyatakan.
6. Markah yang diperuntukkan bagi setiap ceraihan soalan ditunjukkan dalam kurungan [].
7. Anda dibenarkan menggunakan kalkulator saintifik yang tidak boleh diprogram.

Untuk Kegunaan Pemeriksa			
Bahagian	Soalan	Markah Penuh	Markah Diperoleh
A	1	6	
	2	5	
	3	5	
	4	4	
B	5	6	
	6	6	
	7	6	
	8	6	
	9	6	
C	10	10	
	11	10	
	12	10	
Jumlah			

Kertas soalan ini mengandungi 19 halaman bercetak

INFORMATION FOR CANDIDATES
MAKLUMAT UNTUK CALON

1. This question paper consists of three sections: **Section A**, **Section B** and **Section C**.
Kertas soalan ini mengandungi tiga bahagian: Bahagian A, Bahagian B dan Bahagian C.
2. Answer **all** questions in **Section A** and **Section B**.
Write your answers for **Section A** and **Section B** in the spaces provided on the question paper.
Jawab semua soalan dalam Bahagian A dan Bahagian B.
Tuliskan jawapan bagi Bahagian A dan Bahagian B dalam ruangan yang disediakan pada kertas soalan.
3. For **Section C**, answer **Question 10** and choose another question from **Question 11 or Question 12**.
You may use equations, diagrams, tables, graphs and other suitable methods to explain your answers.
Bagi Bahagian C, jawab Soalan 10 dan pilih mana-mana satu soalan daripada Soalan 11 dan Soalan 12.
Anda boleh menggunakan persamaan, gambar rajah, jadual, graf dan cara lain yang sesuai untuk menjelaskan jawapan anda.
4. The diagrams in the questions are not drawn to scale unless stated.
Rajah yang mengiringi soalan tidak dilukiskan mengikut skala kecuali dinyatakan.
5. The marks allocated for each sub-part of a question are shown in brackets.
Markah yang diperuntukan bagi setiap ceraihan soalan ditunjukkan dalam kurungan.
6. If you wish to change your answer, neatly cross out the answer that you have done.
Then write down the new answer.
Sekiranya anda hendak menukarkan jawapan, batalkan dengan kemas jawapan yang telah dibuat.
Kemudian tulis jawapan yang baru.
7. You may use a non-programmable scientific calculator.
Anda dibenarkan menggunakan kalkulator saintifik yang tidak boleh diprogram.
8. The time suggested to answer **Section A** is 60 minutes, **Section B** is 50 minutes and **Section C** is 40 minutes.
Masa yang dicadangkan untuk menjawab Bahagian A ialah 60 minit, Bahagian B ialah 50 minit dan Bahagian C ialah 40 minit.
9. Hand in this question paper at the end of the examination.
Serahkan kertas soalan ini di akhir peperiksaan.

Section A
Bahagian A
[20 marks]
[20 markah]

Answer **all** questions in this section.
The time suggested to answer this section is 60 minutes

Jawab semua soalan dalam bahagian ini.
Masa yang dicadangkan untuk menjawab bahagian ini ialah 60 minit.

1 Diagram 1.1 and Diagram 1.2 show an experiment to study the malleability of two types of substances when they were hammered for a few times.
Rajah 1.1 dan Rajah 1.2 menunjukkan eksperimen untuk mengkaji kebolehtempaan dua jenis bahan apabila diketuk dengan penukul beberapa kali.



Diagram 1.1
Rajah 1.1

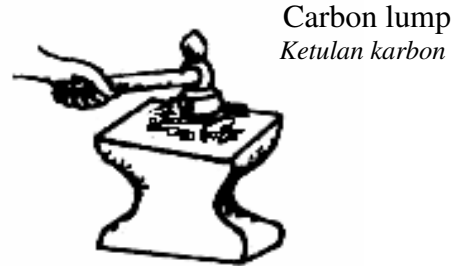


Diagram 1.2
Rajah 1.2

(a) Table 1 shows the result of the experiment.
Jadual 1 menunjukkan keputusan eksperimen.

Type of substance <i>Jenis bahan</i>	Malleability of substance <i>Kebolehtempaan bahan</i>
Aluminium lump <i>Ketulan aluminium</i>	The shape of aluminium lump changes <i>Bentuk ketulan aluminium berubah</i>
Carbon lump <i>Ketulan karbon</i>	The carbon breaks into small pieces <i>Karbon pecah kepada serpihan kecil</i>

Table 1
Jadual 1

Based on the result in Table 1, state **one** inference that you can make.
Berdasarkan keputusan dalam Jadual 1, nyatakan satu inferens yang boleh anda buat.

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

(b) State the variables in this experiment.
Nyatakan pembolehubah dalam eksperimen ini

(i) Manipulated variable :
Pembolehubah dimanipulasikan :

.....

(ii) Responding variable :
Pembolehubah bergerakbalas :

.....

[2 marks]
[2 markah]

(c) Based on this experiment, which substance is suitable for making kitchen utensils?
Berdasarkan eksperimen ini, bahan manakah sesuai untuk dibuat alatan memasak ?

.....

[1 mark]
[1 markah]

(d) Aluminium is a metal. What is the operational definition for metal in this experiment?
Aluminium adalah logam. Apakah definisi secara operasi untuk logam dalam eksperimen ini?

.....

[1 mark]
[1 markah]

2

Diagram 2 shows an experiment to study the heat change of the reaction between ammonium chloride and water. The temperature of the solution is recorded every 2 minutes. The result of the experiment is shown in Table 2.

Rajah 2 menunjukkan eksperimen untuk mengkaji perubahan haba bagi tindakbalas antara ammonium klorida dan air. Suhu larutan direkodkan setiap 2 minit. Keputusan eksperimen ditunjukkan dalam Jadual 2.

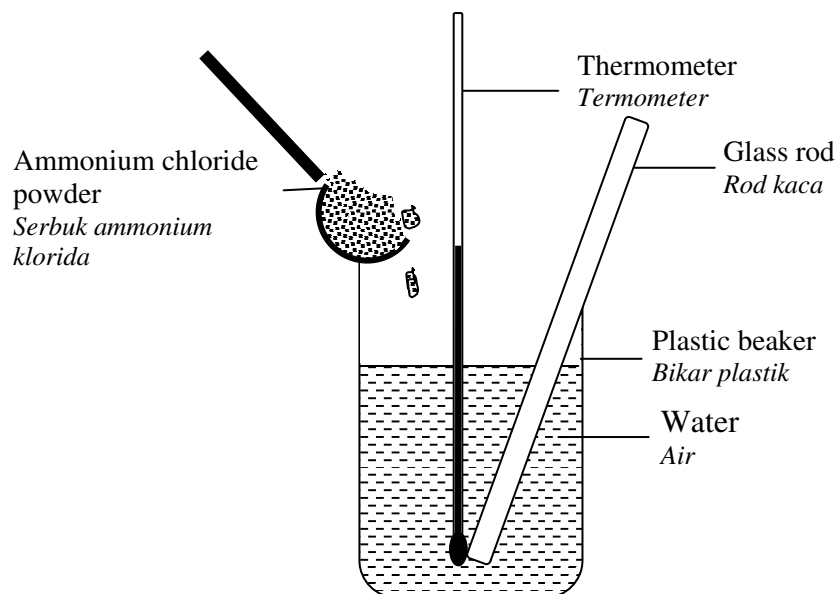
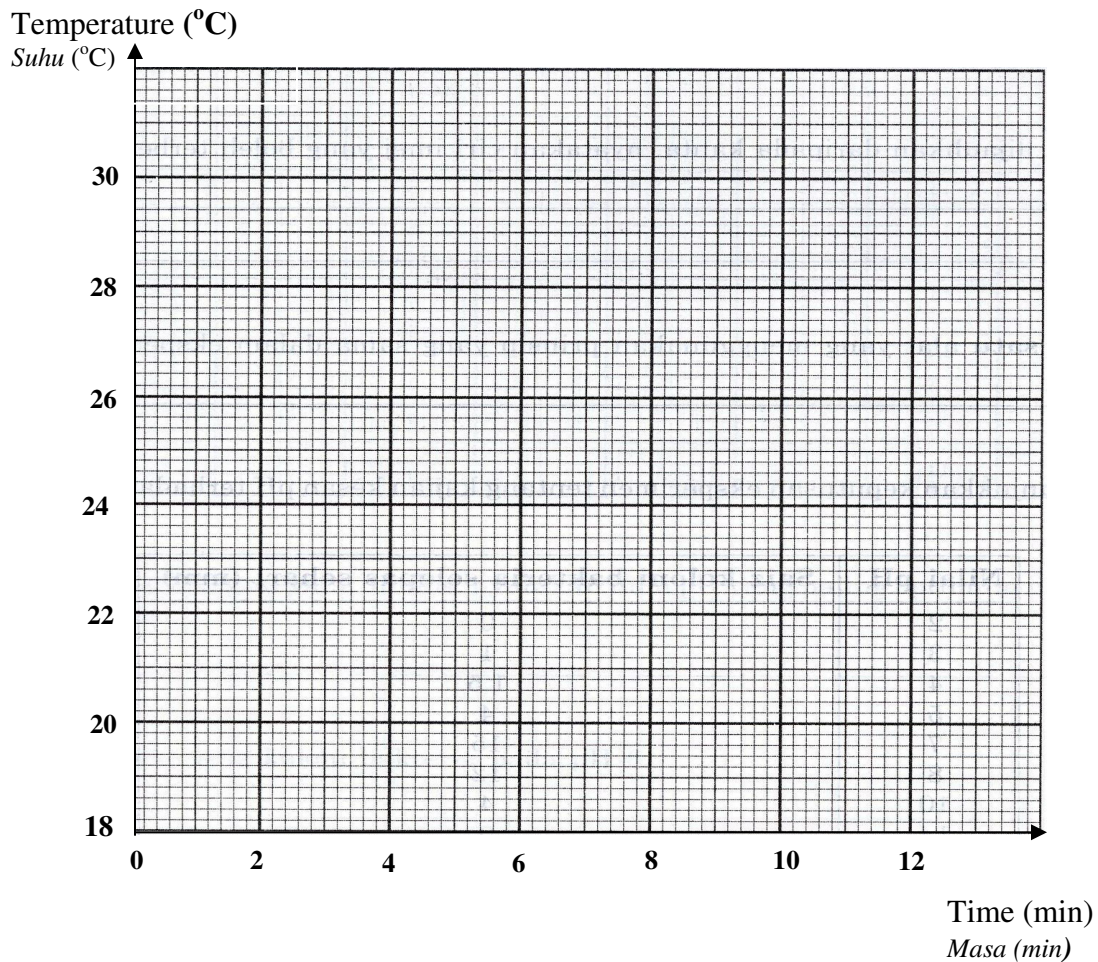


Diagram 2
Rajah 2

Time (Minutes) <i>Masa (Minit)</i>	Temperature (°C) <i>Suhu (°C)</i>
0	30
2	28
4	26
6	24
8	22

Table 2
Jadual 2

- (a) Based on Table 2, draw a graph of temperature against time.
Berdasarkan Jadual 2, lukis graf suhu melawan masa.



[2 marks]
 [2 markah]

- (b) Based on the graph in 2(a), state the relationship between the temperature and time.
Berdasarkan graf di 2(a), nyatakan hubungan antara suhu dengan masa.

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

- (c) Predict the temperature of the reaction at the 9th minutes.
Ramalkan suhu tindakbalas pada minit ke 9.

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

- (d) State one hypothesis for this experiment.
Nyatakan satu hipotesis bagi eksperimen ini.

.....

[1 mark]
[markah]

3

Diagram 3.1 and Diagram 3.2 shows the results of an experiment to measure the size of image of different object distance in a pin-hole camera.
Rajah 3.1 dan Rajah 3.2 menunjukkan keputusan eksperimen untuk mengukur saiz imej bagi jarak objek yang berbeza bagi kamera lubang jarum.

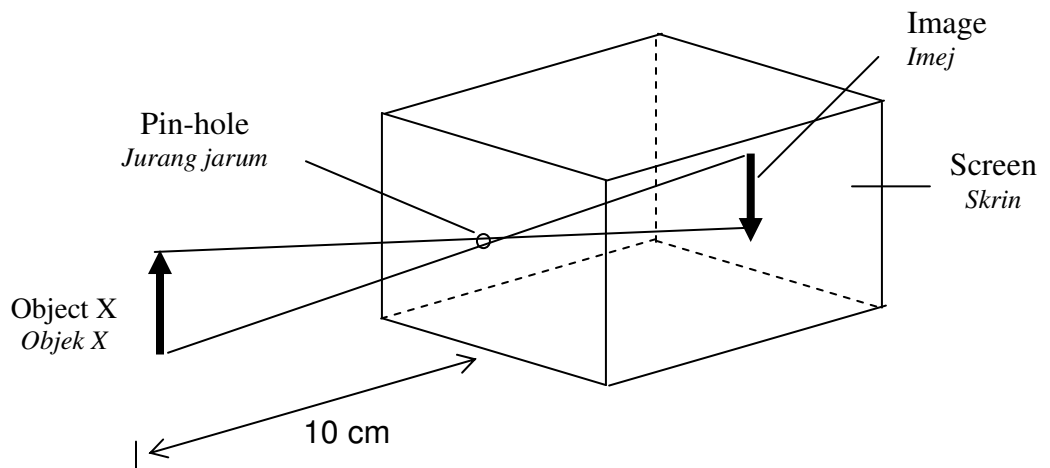


Diagram 3.1
Rajah 3.1

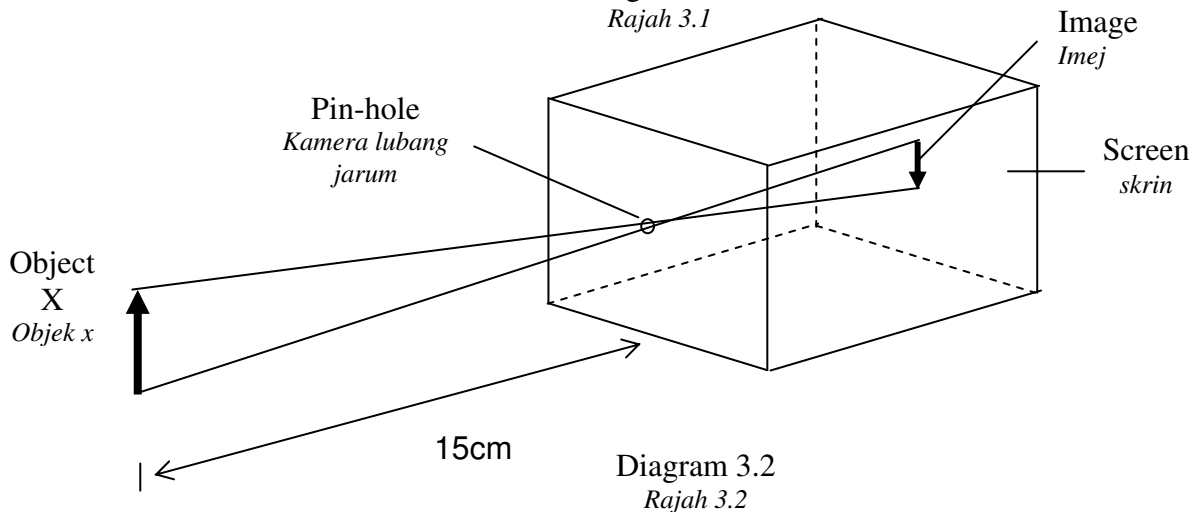


Diagram 3.2
Rajah 3.2

- (a) Measure and write down the size of image in Diagram 3.2.
Ukur dan catatkan saiz imej dalam Rajah 3.2.

.....

[1 mark]
[1 markah]

- (b) Based on diagram 3.1 and 3.2, state the observation about the size of image formed.

Berdasarkan rajah 3.1 dan 3.2, nyatakan pemerhatian berdasarkan saiz imej yang terbentuk

.....

[1 mark]
[1 markah]

- (c) Based on the observation in (a) state **one** inference that you can make.

Berdasarkan pemerhatian di (a), nyatakan satu inferens yang dapat anda buat.

.....

[1 mark]
[1 markah]

- (d) Mark (✓) in Diagram 3.3 which form an image with the same characteristics as the image formed in Diagram 3.1.

Tandakan (✓) pada Rajah 3.3 yang mempunyai ciri yang sama seperti imej dalam Rajah 3.1

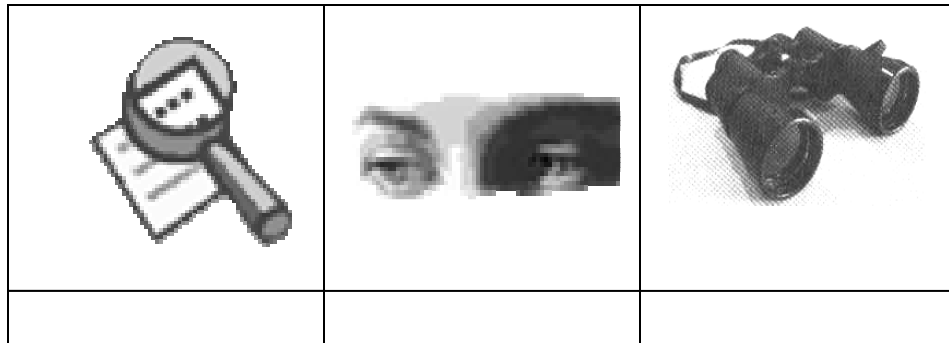


Diagram 3.3
Rajah 3.3

[1 mark]
[1 markah]

- (e) Predict the effect on the image if a convex lens is placed in front of the pinhole camera.

Ramakan! kesan yang berlaku pada imej sekiranya sebuah kanta cembung diletakkan di hadapan kamera lubang jarum.

.....

[1 mark]
[1 markah]

4

Diagram 4.1 shows an experiment to study the hardness of alloy compared to pure metal.

Rajah 4.1 menunjukkan eksperimen untuk mengkaji kekerasan aloi berbanding dengan logam tulen.

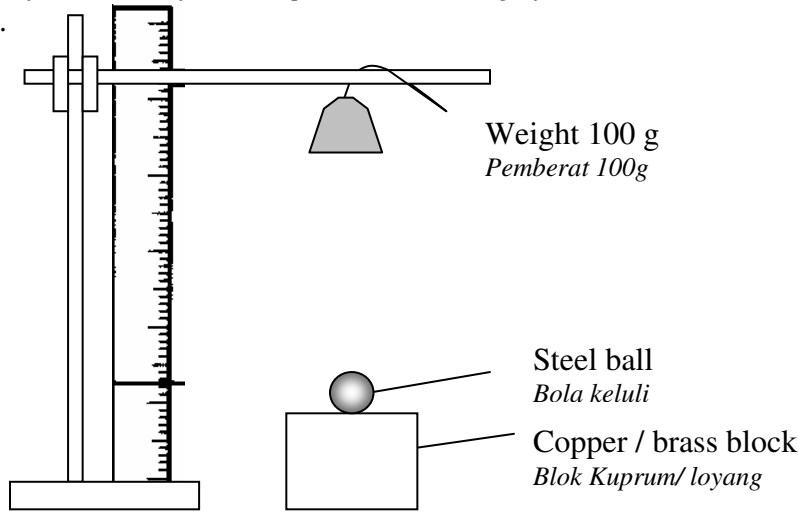


Diagram 4.1
Rajah 4.1

Diagram 4.2 shows the effect on the copper block and brass block when 100g weight was dropped.

Rajah 4.2 menunjukkan kesan pada blok kuprum dan blok loyang apabila pemberat 100g dijatuhkan.

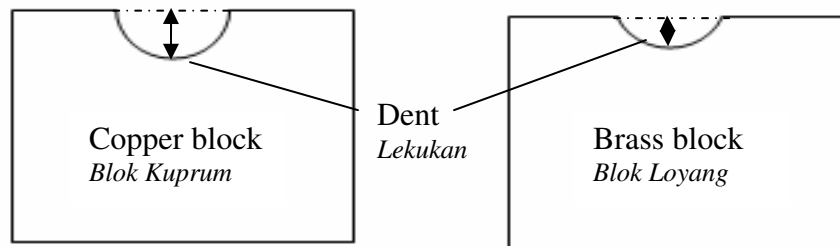


Diagram 4.2
Rajah 4.2

- (a) Based on Diagram 4.2, measure and record the depth of the dent on the copper block.

Berdasarkan Rajah 4.2, ukur dan catatkan kedalaman lekukan pada blok kuprum.

.....cm

[1 mark]
[1 markah]

- (b) State **one** hypothesis for this experiment.

Nyatakan satu hypothesis untuk eksperimen ini.

.....

[1 mark]
[1 markah]

(c) State the variable in this experiment:
Nyatakan pembolehubah dalam eksperimen ini:

(i) constant variable :
pembolehubah yang dimalarkan:

.....

(ii) responding variable :
Pembolehubah bergerakbalas:

.....

[2 marks]
[2 markah]

(d) Predict the depth of the dent on copper block, if the weight is change to 200g.
Ramalkan kedalaman lekukan pada blok kuprum, jika berat diubah kepada 200g.

.....

[1 mark]
[1 markah]

Section B
Bahagian B
[30 marks]
[30 markah]

Answer **all** questions in this section.
The time suggested to answer this section is 50 minutes

Jawab **semua** soalan dalam bahagian ini.
Masa yang dicadangkan untuk menjawab bahagian ini ialah 50 minit.

- 5 Diagram 5 shows several phases in cell division that occurs in human.
Rajah 5 menunjukkan beberapa peringkat dalam pembahagian sel yang berlaku pada manusia.

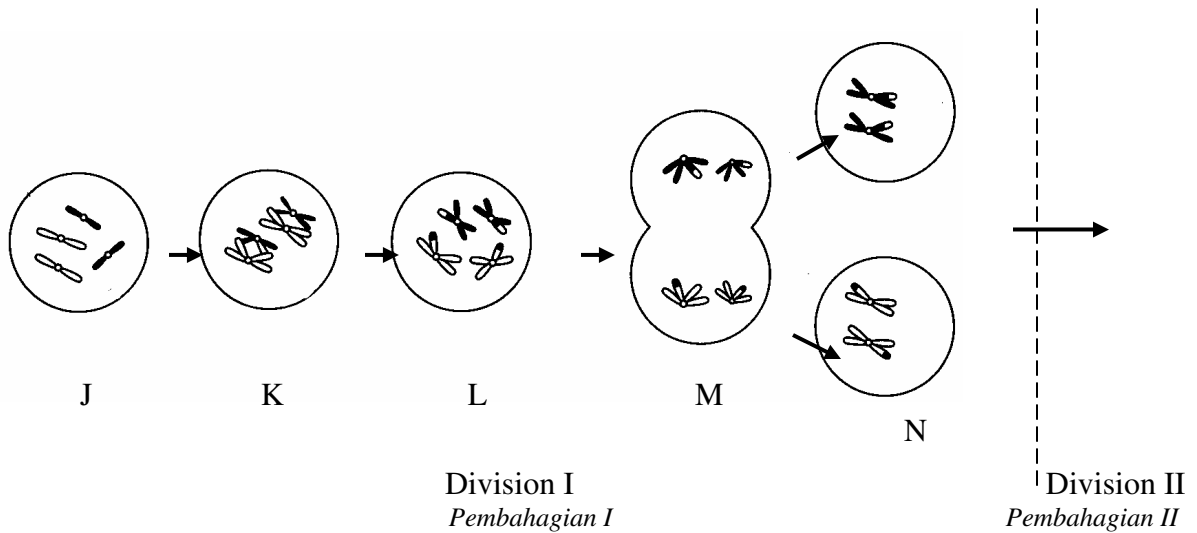


Diagram 5
Rajah 5

- (a) (i) State the type of cell division in Diagram 5?
Nyatakan jenis pembahagian sel dalam Rajah 5

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

- (ii) Explain your answer in (a)(i).
Berikan sebab bagi jawapan di (a)(i).

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

- (b) What happens at stage K?
Apakah berlaku pada peringkat K?

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

- (c) How many daughter cells will be produced at the end of the process in 5 (a)?
Berapakah bilangan sel anak yang akan dihasilkan pada akhir proses dalam 5 (a)?

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

- (d) Name one organ in humans where this cell division occurs.
Namakan satu organ pada manusia yang berlakunya pembahagian sel ini.

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

- (e) State one importance of this cells division.
Nyatakan satu kepentingan pembahagian sel ini.

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

- 6 Diagram 6 shows a disorder cause by mutation.
Rajah 6 menunjukkan sejenis kecacatan yang disebabkan oleh mutasi .



Diagram 6
Rajah 6

- (a) Based on Diagram 6, state two characteristics shown by this type of disorder.
Berdasarkan Rajah 6, nyatakan dua ciri yang ditunjukkan oleh jenis kecacatan ini

(i)

(ii)

[2 marks]
[2 markah]

- (b) Name the disorder shown in Diagram 6.
Namakan kecacatan dalam Rajah 6.

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

- (c) Name the type of mutation occur (a).
Namakan jenis mutasi yang berlaku dalam (a)

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

- (d) How many chromosomes exist in this type of disorder?
Berapakah bilangan kromosom yang wujud dalam jenis kecacatan ini ?

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

- (e) State **one** factor that caused the mutation shown in Diagram 6.
*Nyatan **satu** faktor yang menyebabkan mutasi yang ditunjukkan dalam Rajah 6.*

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

- 7 Diagram 7 shows a model of atomic structure.
Rajah 7 menunjukkan model struktur atom.

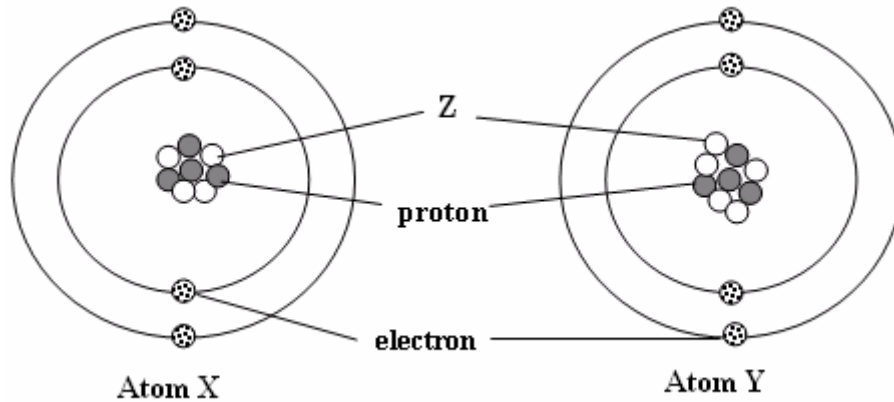


Diagram 7
Rajah 7

- (a) Name particle Z.
Namakan zarah Z.

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

- (b) Based on Diagram 7, state the proton number and nucleon number of atom X.
Berdasar Rajah 7, nyatakan nombor proton dan nombor nukleon bagi atom X.

Proton number:

Nombor proton

Nucleon number:

Nombor nukleon

[2 marks]

[2 markah]

- (c) State the similarity and difference between atom X and Y
Nyatakan persamaan dan perbezaan antara atom X dan atom Y.

.....

.....

[2 marks]

[2 markah]

- (d) What is the term given in (c)
Apakah istilah yang diberi dalam (c)

.....

[1 mark]

[1 markah]

- 8 A student carried out an experiment to investigate what happens when two primary colours overlap. The set-up of the apparatus is shown in Diagram 8. The bulbs in the green and red boxes are switched on.

Seorang pelajar menjalankan eksperimen untuk mengkaji apakah yang akan berlaku apabila dua warna primer bertindih. Radas disediakan seperti yang ditunjukkan pada Rajah 8. Lampu hijau dan merah dari kotak sinar dihidupkan.

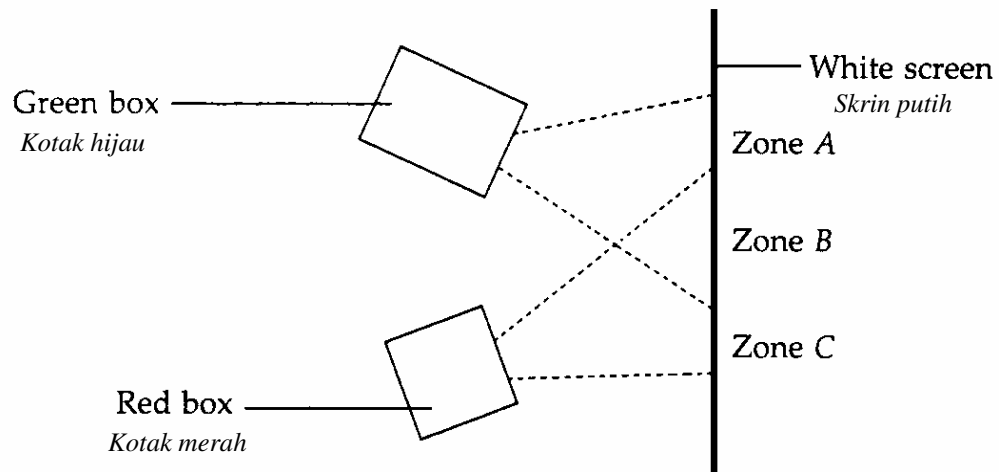


Diagram 8
Rajah 8

- (a) Based on Diagram 8, complete Table 3. [2 marks]
Berdasarkan Rajah 8, lengkapkan Jadual 3. [2 markah]

Zone	A	B	C
Colour	Green

Table 3
Jadual 3

[2 marks]
[2 markah]

- (b) (i) Based on the colour formed on the screen, determine the zone which has secondary colour.
Berdasarkan warna yang terbentuk pada skrin, tentukan zon yang mempunyai warna sekunder.
-
- (ii) Give a reason for your answer in (b)(i).
Berikan sebab kepada jawapan anda di (b) (i)

[2 marks]
[2 markah]

- (c) If the white screen is replaced by a magenta screen, what is the colour of zone B?
Jika skrin putih ditukarkan dengan skrin magenta, apakah warna yang kelihatan pada zon B?

[1 mark]
[1 markah]

- (d) A girl wearing a red dress and a blue skirt is standing in the zone C. What is the colour appearing on the girl's skirt.
Seorang pelajar perempuan memakai baju merah dan skirt biru berdiri di zon C. Apakah warna yang akan kelihatan pada skirt pelajar perempuan tersebut.

[1 marks]
[1 markah]

9 Diagram 9 shows the production of ammonia in industry.
Rajah 9 menunjukkan penghasilan ammonia dalam industri

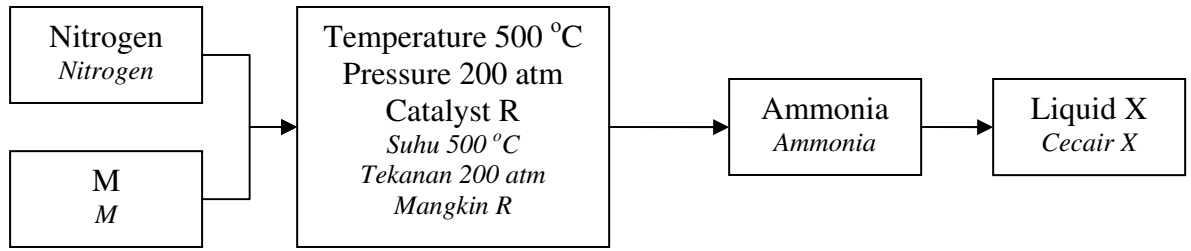


Diagram 9
Rajah 9

a) Name substance M.
Namakan bahan M

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

b) Name the process shown in Diagram 9.
Namakan proses yang ditunjukkan pada Rajah 9

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

c) What is the ratio of nitrogen to substance M used in this process?
Apakah nisbah nitrogen kepada bahan M yang digunakan dalam proses ini?

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

d) Name catalyst R.
Namakan mangkin R.

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

e) The liquid X produced react with carbon dioxide to form compound P.
Cecair X yang terhasil bertindakbalas dengan karbon dioksida untuk membentuk sebatian P.

i) What is P?
Apakah P?

ii) State **one** use of P.
*Nyatakan **satu** kegunaan P.*

.....
[2 marks]
[2 markah]

Section C**Bahagian C**

[20 marks]

[20 markah]

Answer **Question 10** and either **Question 11** or **Question 12**.

The time suggested to answer this section is 40 minutes.

Jawab **Soalan 10** dan mana-mana satu daripada **Soalan 11** atau **Soalan 12**

Masa yang dicadangkan untuk menjawab soalan ini ialah 40 minit.

10

Study the following statement.

Kaji pernyataan berikut:

The position of metals in reactivity series depend on their reaction with oxygen
Kedudukan logam dalam siri kereaktifan bergantung kepada tindakbalasnya dengan oksigen.

You are given potassium manganate (VII), zinc powder, aluminum powder and copper powder.

Anda dibekal dengan kalium manganate (VII), serbuk zink, serbuk aluminum dan serbuk kuprum.

a) Suggest one hypothesis to investigate the above statement.

Cadangkan satu hipotesis untuk menyiasat pernyataan di atas.

[1 mark]

[1 markah]

b) Describe an experiment to test your hypothesis in (a) based on the following criteria.

Huraikan satu eksperimen untuk menguji hipotesis anda di (a) berpandukan kriteria berikut.

(i) Aim of the experiment

Tujuan eksperimen

[1 mark]

[1 markah]

(ii) Identification of variables

Mengenal pasti pembolehubah

[2 marks]

[2 markah]

(iii) List of apparatus and materials

Senarai radas dan bahan

[1 mark]

[1 markah]

(iv) Procedure or method

Prosedur atau kaedah

[4 marks]

[4 markah]

(v) Tabulation of data

Penjadualan data

[1 mark]

[1 markah]

- 11 a) There are three types of radioactive rays. Give two of them and explain one special characteristic for each of them.
Terdapat tiga jenis sinaran radioaktif. Berikan dua daripadanya dan terangkan satu ciri-ciri istimewa bagi setiap satu..

[4 marks]
 [4 markah]

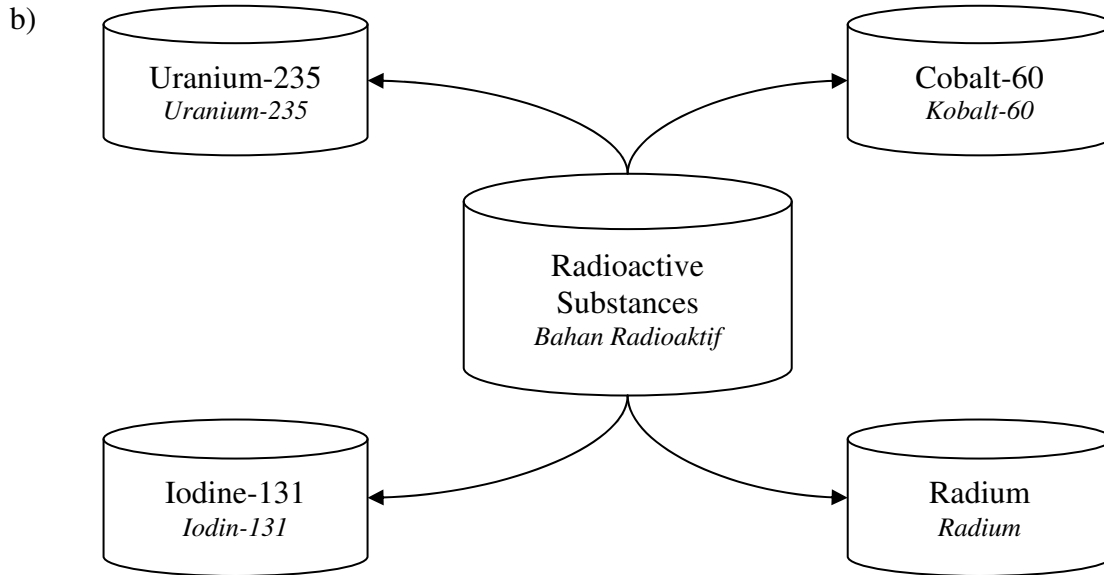


Diagram 10
 Rajah 10

Study the information in Figure 10 and construct the concept of radioactive substance. Your answer should be based on the following steps:

*Kaji maklumat dalam Rajah 10 dan bina konsep tentang bahan radioaktif.
 Jawapan anda hendaklah berdasarkan langkah-langkah berikut;*

- Identify two common characteristics of radioactive substance
Mengenal pasti dua ciri sepunya bahan radioaktif.
 [2 marks]
 [2 markah]
- Relate the common characteristics to the radioactive substance in order to construct the initial concept.
Hubungkan antara ciri-ciri sepunya bahan radioaktif untuk membina konsep awal.
 [1 mark]
 [1 markah]
- Give an example of another radioactive substance and non radioactive substance.
Nyatakan satu contoh lain bahan radioaktif dan satu contoh bukan bahan radioaktif.
 [2 mark]
 [2 markah]
- State the actual concept of radioactive substance.
Nyatakan konsep sebenar bahan radioaktif.
 [1 mark]
 [1 markah]

- 12 a) i) Name two types of drugs.
Namakan dua jenis dadah.
- [2 marks]
[2 markah]
- ii) State two risks of taking drugs from aspect of social life.
Nyatakan dua risiko pengambilan dadah dari aspek sosial.
- [2 marks]
[2 markah]
- b) Ali has a son name Baba who is a drug addict. Baba started taking drugs at the age of 17. He needs extra money to buy drugs and for that he has been caught by a police for stealing bicycle from Bujang's house. Explain how Ali can overcome his son drug addicted. Your answer should include the following:
Ali mempunyai anak bernama Baba seorang penagih dadah. dan mula mengambil dadah sejak beliau berusia 17 tahun. Dia memerlukan wang lebih untuk membeli dadah dan dia telah ditangkap polis kerana cuba mencuri basikal dari rumah Bujang. Terangkan bagaimana Ali boleh mengatasi masalah ketagihan dadah anaknya. Jawapan anda hendaklah mengandungi perkara berikut;
- Identify the problem
Mengenalpasti masalah

[1 mark]
[1 markah]

 - Clarification of the problem
Penjelasan masalah

[1 mark]
[1 markah]

 - Solving methods
Kaedah-kaedah penyelesaian

[3 marks]
[3 markah]

 - Choose the best method and explain your choice
Pilih kaedah terbaik dan jelaskan pilihan anda.

[1 mark]
[1 markah]

END OF QUESTION PAPER

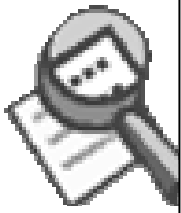
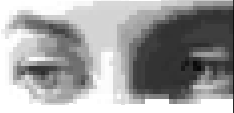

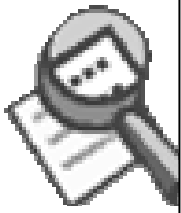
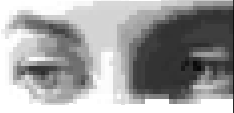

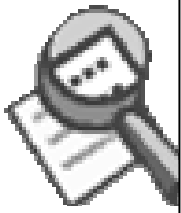
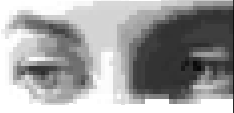

PEPERIKSAAN AKHIR TAHUN SCIENCE T 4

Marking scheme paper 1

1	A	11	A	21	A	31	C	41	B
2	A	12	C	22	B	32	D	42	A
3	D	13	A	23	B	33	C	43	C
4	D	14	C	24	C	34	D	44	C
5	C	15	A	25	B	35	A	45	C
6	C	16	A	26	D	36	B	46	B
7	D	17	C	27	C	37	D	47	D
8	D	18	C	28	D	38	A	48	B
9	B	19	B	29	C	39	D	49	D
10	D	20	B	30	A	40	B	50	D

Marking scheme paper two

			Markah
1	(a)	Aluminium / metal is malleable	1
	(b)	(i) Type of substance/ <i>Jenis bahan</i>	2
		(ii) Malleability of substance	
	(c)	Aluminium	1
	(d)	Metal is a material that can be shaped into sheet when hammered.	1
		Total	5
2	(a)	<p>point correctly Straight line (must use ruler)</p>	2

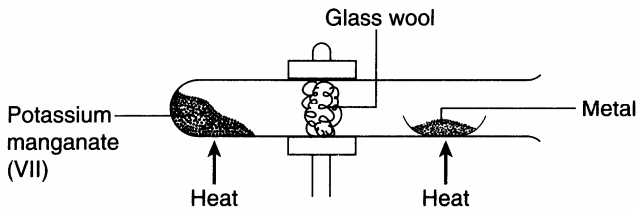
	(b)	When the time increase, the temperature decrease// The longer the time, the lower temperature	1						
	(c)	21 °C	1						
	(d)	As the time increases the temperature decreases	1						
		Total	5						
3	(a)cm (depends on the size on the question paper)	1						
	(b)	The size of image in Diagram 3.1 is larger than size of image in Diagram 3.2	1						
	(c)	Distance of object in Diagram 3.1 is shorter	1						
	(d)	<table border="1" style="width: 100%; text-align: center;"> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>√</td> <td></td> </tr> </table>					√		1
									
	√								
	(e)	The image becomes sharper	1						
		Total	5						
4	(a)mm / cm (depends on the size on the question paper)	1						
	(b)	Brass block is harder than copper block// copper block is softer than brass block	1						
	(c)	i. Height of weight // mass of weight ii. The depth of the dent	1 1						
	(d)	more than the reading at 4(a)// (depends on the measurement from the question)	1						
		Total	5						

No			
5.	(a)	(i)	Meiosis
		(ii)	Crossing over occurs at K // There are two divisions involve
	(b)		Crossing over
	(c)		4
	(d)		Testis / ovary
	(e)		To produce gametes.
			Total : 6m

No			
6.	(a)	(i)	Inner corner of the eye
		(ii)	thick neck (accept any reasonable answer)
	(b)		Down's syndrome
	(c)		Chromosome mutation
	(d)		47
	(e)		Chemical substances / ultraviolet light / radiation
			Total : 6m

No			
7	(a)		Neutron
	(b)	(i)	4
		(ii)	8
	(c)		Atom X and Y have the same number of protons but different numbers of neutrons
	(d)		Isotope
			Total : 6m

No												
8	(a)	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Zone</td> <td>A</td> <td>B</td> <td>C</td> </tr> <tr> <td>Colour</td> <td>Green</td> <td>Yellow</td> <td>Red</td> </tr> </table>		Zone	A	B	C	Colour	Green	Yellow	Red	2 m
Zone	A	B	C									
Colour	Green	Yellow	Red									
	(b)	(i)	Yellow / zone B	1 m								
		(ii)	Yellow produced by combination of two primary colour, green and red	1 m								
	(c)		Red	1 m								
	(d)		Black	1 m								
			Total : 6m									

No		Answer	Marks
9	a)	Hydrogen	1 m
	b)	Haber Process	1 m
	c)	1 : 3	1 m
	d)	Iron / Ferum	1 m
	e) i)	Urea	1 m
	ii)	Fertilizers	1 m
			Total : 6m
10	a)	Aluminium reacts the most active with oxygen// Copper reacts the least active with oxygen	1 m
	b)	Aim: To study the reactivity of different metals with oxygen. Manipulated variable : Type of metals Responding variable : Reactivity of reaction Fixed variable : Size of metals// mass of metals// quantity of metals	1 m All correct – 2m 2 correct – 1m 1 correct – 0m
		Apparatus & material : Glass wool, potassium manganate (VII), boiling tube, Bunsen burner, retort stand, aluminum powder, zinc powder and copper powder. Procedure :	Any three correct – 1m
			
		<ol style="list-style-type: none"> Set up apparatus as shown in diagram above. Heat Aluminium powder and then potassium manganate (VII) Record the reaction of metal with oxygen . Repeat step 1 to 3 by using zinc powder and copper powder. 	1m 1m 1m 1m

		Tabulation of data :									
		<table border="1"> <thead> <tr> <th>Type of metal</th> <th>Reaction of metal</th> </tr> </thead> <tbody> <tr> <td>Aluminum powder</td> <td></td> </tr> <tr> <td>Zinc powder</td> <td></td> </tr> <tr> <td>Copper powder</td> <td></td> </tr> </tbody> </table>	Type of metal	Reaction of metal	Aluminum powder		Zinc powder		Copper powder		1m
Type of metal	Reaction of metal										
Aluminum powder											
Zinc powder											
Copper powder											
			Total : 10m								
11	a)	<table border="1"> <tbody> <tr> <td>Alpha ray</td> <td> <ul style="list-style-type: none"> Positive charge// Can be stopped by a piece of paper </td> </tr> <tr> <td>Beta ray</td> <td> <ul style="list-style-type: none"> Negative charge// Can be stopped by a few mm of aluminum </td> </tr> <tr> <td>Gamma ray</td> <td> <ul style="list-style-type: none"> Neutral// Can be stop by thick lead (10 cm) or several meter thick concrete </td> </tr> </tbody> </table>	Alpha ray	<ul style="list-style-type: none"> Positive charge// Can be stopped by a piece of paper 	Beta ray	<ul style="list-style-type: none"> Negative charge// Can be stopped by a few mm of aluminum 	Gamma ray	<ul style="list-style-type: none"> Neutral// Can be stop by thick lead (10 cm) or several meter thick concrete 	(Any two types) 2 m Characteristic: 2 m		
Alpha ray	<ul style="list-style-type: none"> Positive charge// Can be stopped by a piece of paper 										
Beta ray	<ul style="list-style-type: none"> Negative charge// Can be stopped by a few mm of aluminum 										
Gamma ray	<ul style="list-style-type: none"> Neutral// Can be stop by thick lead (10 cm) or several meter thick concrete 										
	b)	<p>Two common characteristic</p> <ul style="list-style-type: none"> Has an unstable nucleus Will decay and emit radiation. <p>Initial concept A substance that has an unstable nucleus and will decay and emit radiation is radioactive substance</p> <p>Example and non example Carbon -14 and Zinc</p> <p>(Accept any suitable example)</p> <p>Actual concept Radioactive substance is a substance that has an unstable nucleus and will decay and emit radiation</p>	2 m 1m 1m 1m 1m								
			Total : 10m								
12	a)	i)	<p>a) stimulants b) depression c) hallucinogens</p> <p>d) anti-depressants e) inhalants</p> <p>*Accept if the student gives examples of the drugs.</p>	(Any two) 2m							

		ii)	<ul style="list-style-type: none"> • Become irritable and lose interest in their friends, hobbies and work • Drugs addicts turn into crime to get money for drugs <p>(Accept any reasonable answer)</p>	2m
	b)		<p>Identify the problem Baba is stealing to get some money to buy drugs.</p> <p>Clarification of the problem Because of drugs addicted Baba will do anything including stealing to get some money to buy drugs.</p> <p>Solving Method</p> <ul style="list-style-type: none"> • Try to get traditional treatment for his son. • Register his son to a rehabilitant center. • Always control the activities done by his son <p>Best method Register his son to a rehabilitant center because he will get treatment that include all aspects of life and thus solve the problem.</p>	<p>1</p> <p>1</p> <p>3</p> <p>1</p>
				Total : 10m