

1511/1
SAINS
PAPER 1
OKT / NOV
2007
1¼ HOURS

JABATAN PELAJARAN TERENGGANU
DENGAN KERJASAMA
PERSIDANGAN KEBANGSAAN PENGETUA
SEKOLAH MENENGAH MALAYSIA
CAWANGAN TERENGGANU

PEPERIKSAAN AKHIR TAHUN 2007
TINGKATAN EMPAT

SCIENCE

Paper 1

One hour and Fifteen Minutes

DO NOT OPEN THIS TEST PAPER UNTIL YOU ARE TOLD TO DO SO

- 1 *This question paper consists of 50 questions.*
- 2 *Answer **all** questions.*
- 3 *Answer each question by blackening the correct space on the answer sheet.*
- 4 *Blacken only **one** space for each question*
- 5 *If you wish to change your answer, erase the blackened mark that you have made. Then blacken the space for the new answer.*
- 6 *The diagrams in the questions provided are not drawn to scale unless stated.*
- 7 *You may use a non-programmable scientific calculator.*

This question paper consists of **23** printed pages

[Lihat sebelah

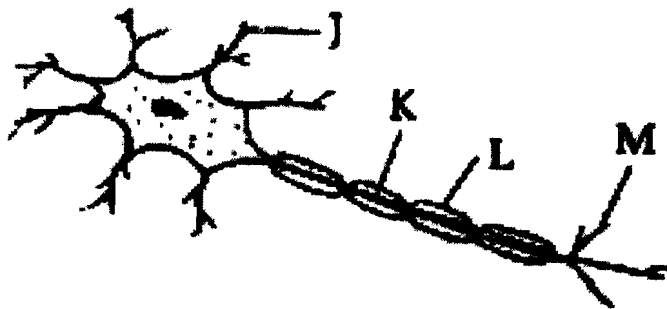
1 What is the basic unit of the nervous system ?

(*Apakah unit asas bagi sistem saraf?*)

- A axon
(*akson*)
- B neurone
(*neuron*)
- C dendrite
(*dendrit*)
- D myelin sheath
(*salut myelin*)

2 Diagram shows a typical structure of a motor neurone.

(*Rajah menunjukkan struktur neuron motor*)



Which of the following pairs is correct?

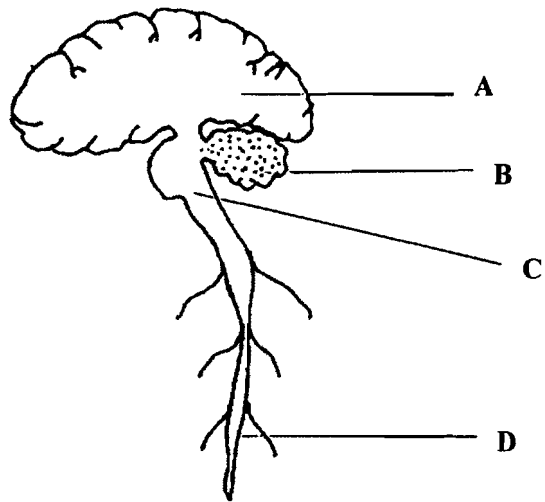
(*Antara pasangan berikut, manakah yang benar?*)

A	J	Transmitting nerve impulses towards the cell body (<i>menghantar impuls saraf ke arah badan sel</i>)
B	K	Transmitting nerve impulses away from the cell body (<i>menghantar impuls saraf keluar daripada badan sel</i>)
C	L	Decreasing the rate of transmission of nerve impulses. (<i>melambatkan perjalanan impuls saraf</i>)
D	M	Releasing chemical substances to stimulate the motor system. (<i>menghasilkan bahan kimia untuk merangsang system motor</i>)

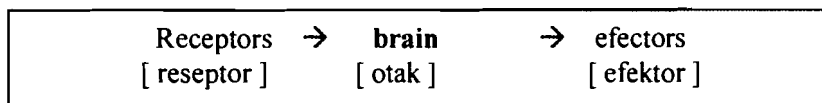
3 Diagram shows parts of human nervous system.

Which part controls body balance ?

(Rajah menunjukkan bahagian-bahagian pada sistem saraf manusia. Bahagian manakah yang mengawal keseimbangan badan?)



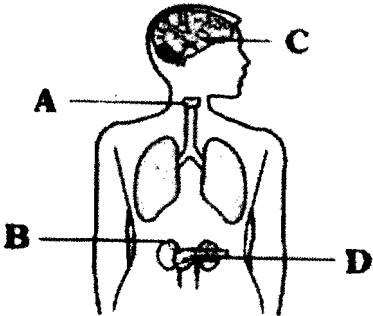
4 Diagram shows the flow of impulse.



Which of the following action is shown by the flow of impulse in diagram
(Manakah tindakan yang ditunjukkan oleh perjalanan impuls pada rajah)

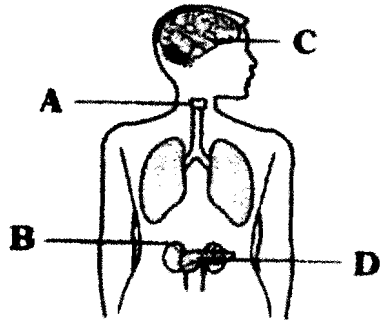
- A heartbeat
(denyutan jantung)
- B reading
(membaca)
- C vomiting
(muntah)
- D sneezing
(bersin)

- 5 Diagram shows the position of the endocrine glands in the human body.
(Rajah menunjukkan kedudukan kelenjar-kelenjar endokrin dalam tubuh manusia)
Which of the glands labelled as A, B, C and D produces a hormone that controls the glucose level ?
(Antara kelenjar berlabel A, B, C dan D, yang manakah menghasilkan hormone yang mengawal aras glukosa dalam darah?)

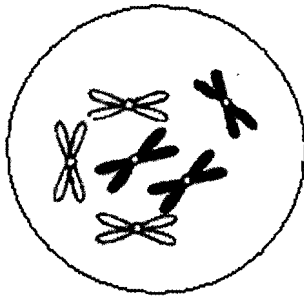


- 6 Which of the following results from increased secretion of adrenaline?
(Antara berikut yang manakah merupakan kesan daripada pertambahan pengeluaran adrenalin?)
- A. Decreased sweating
(pengurangan berpeluh)
 - B. Decreased heart rate
(pengurangan kadar denyutan jantung)
 - C. Decreased breathing rate
(pengurangan kadar bernafas)
 - D. Increased supply of glucose in the blood
(pertambahan bekalan glukosa dalam darah)

- 7 Diagram shows the position of the endocrine glands in the human body.
 (Rajah menunjukkan kedudukan kelenjar-kelenjar endokrin dalam tubuh manusia)
 Which of the glands labelled as A, B, C and D produces a hormone that controls body growth?
 (Antara kelenjar berlabel A, B, C dan D, yang manakah menghasilkan hormone yang mengawal pertumbuhan badan)



- 8 Diagram shows a stage of mitosis.
 (Rajah menunjukkan satu peringkat mitosis.)

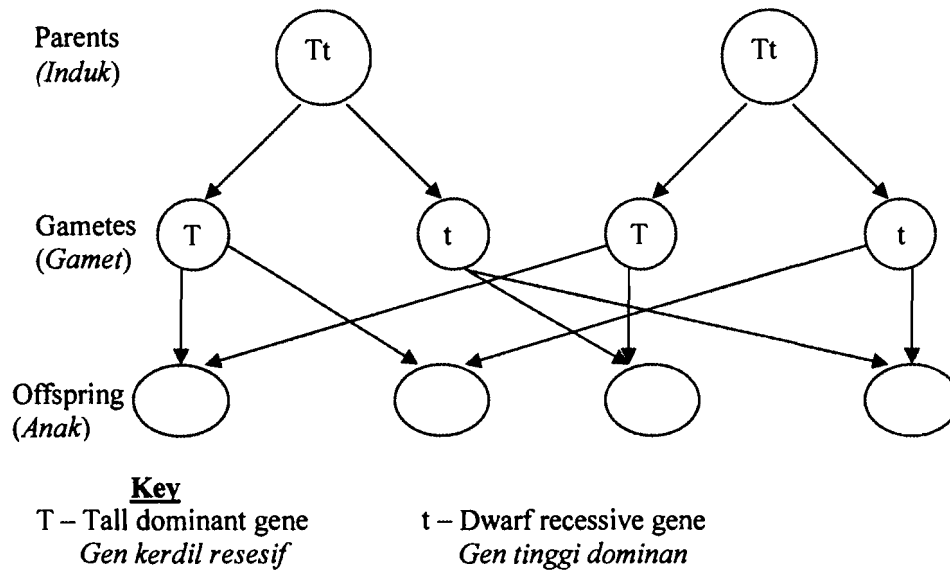


What will be the number of chromosomes in each daughter cell when the process of mitosis is complete?

(Berapakah bilangan kromosom dalam setiap sel anak setelah proses mitosis selesai?)

- A Two
(dua)
- B Three
(Tiga)
- C Six
(Enam)
- D Twelve
(Dua belas)

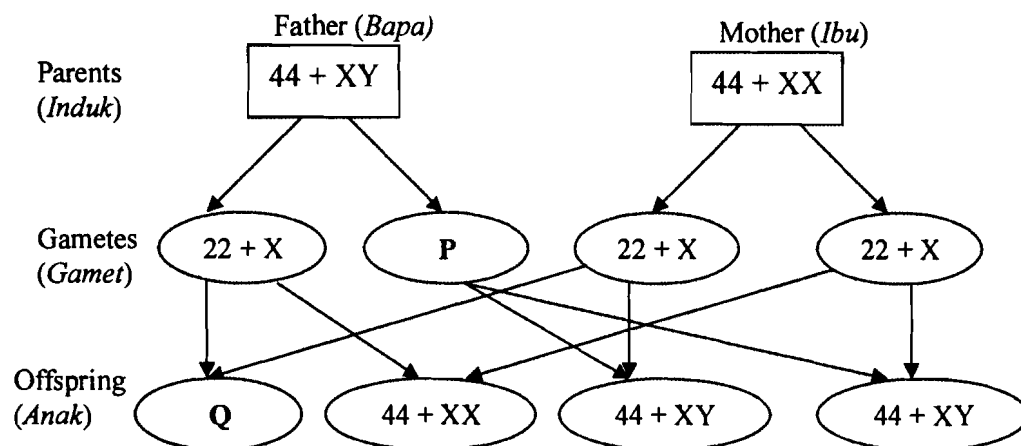
- 9 In which part of the plant does meiosis occur?
(Di bahagian tumbuhan yang manakah meiosis berlaku?)
- A Petal
(Ranggi)
- B Anther
(Anter)
- C Root tip
(Hujung akar)
- D Shoot tip
(Hujung pucuk)
- 10 Which of the following shows the chromosomes present in the female liver cells?
(Antara berikut yang manakah menunjukkan kromosom yang hadir dalam sel hati wanita?)
- A 22 + X
- B 22 + Y
- C 44 + XX
- D 44 + XY
- 11 Diagram shows the inheritance of height in pea plants.
(Rajah menunjukkan pewarisan ketinggian pada pokok kacang.)



What is the expected ratio of the cross?
(Apakah nisbah yang mungkin bagi kacukan tersebut?)

- A 1 tall : 1 dwarf
(1 tinggi : 1 kerdil)
- B 2 tall : 1 dwarf
(2 tinggi : 1 kerdil)
- C 1 tall : 3 dwarf
(1 tinggi : 3 kerdil)
- D 3 tall : 1 dwarf
(3 tinggi : 1 kerdil)

- 12 The schematic diagram shows sex determination in human.
(Rajah skema menunjukkan penentuan seks manusia.)



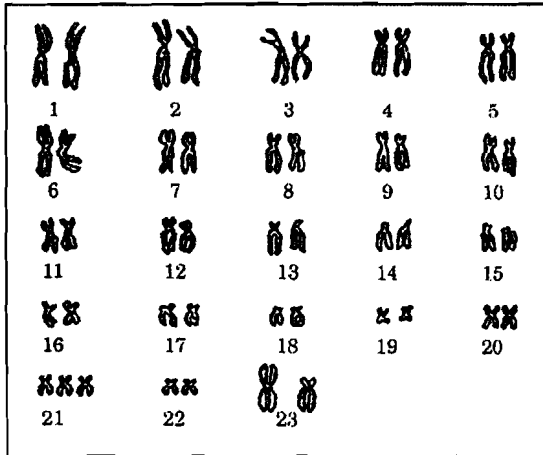
Which of the following are chromosomes found in P and Q?
(Antara berikut manakah kromosom yang terdapat dalam P dan Q?)

	P	Q
A	22 + Y	44 + XY
B	22 + Y	44 + XX
C	22 + X	44 + XX
D	22 + X	44 + XY

- 13 Which of the following is true about non-identical twins?
(Antara berikut yang manakah benar tentang kembar tak seiras?)

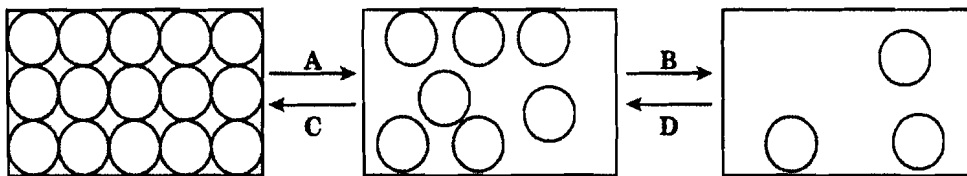
- A Both foetuses share the same placenta.
(Kedua-dua fetus berkongsi plasenta yang sama)
- B They always have the same gender.
(Jantina mereka sentiasa sama.)
- C The zygote formed after fertilisation splits into two.
(Zigot yang terhasil selepas proses persenyawaan membahagi dua.)
- D Two ova are fertilized by two sperms.
(Dua ovum disenyawakan oleh dua sperma.)

- 14 Diagram shows the chromosomes found in a baby skin cells.
 (Rajah menunjukkan kromosom yang terdapat dalam sel kulit seorang bayi.)

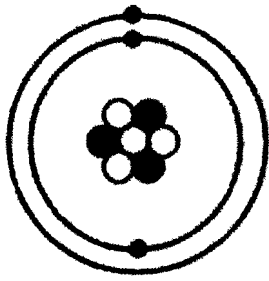


Which of the following genetic diseases is the baby suffering from?
 (Antara berikut manakah penyakit genetik yang dihidapi oleh bayi tersebut?)

- A Down's syndrome
(Sindrom Down)
 - B Albinism
(Albino)
 - C Colour blindness
(Buta warna)
 - D Turner's syndrome
(Sindrom Turner)
- 15 Which of the following A, B, C or D, represents boiling process ?
 (Antara A, B, C dan D, yang manakah mewakili proses pendidihan ?)



- 16 Diagram shows the structure of atom X .
(Rajah menunjukkan struktur atom X)



Keys

- Electron
- Proton
- Neutron

What is the proton number, the nucleon number and the number of electron ?
(Apakah nombor proton, nombor nucleon dan bilangan electron)

	Proton number	Nucleon number	The number of electron
A	3	3	4
B	3	4	3
C	4	10	3
D	3	7	3

- 17 The table shows sub-atoms of four elements.
(Jadual menunjukkan sub-atom bagi empat unsur)

Elements	Number of protons	Number of neutrons	Number of electrons	Nucleon number
P	6	6	6	12
Q	6	8	6	14
R	7	7	7	14
S	8	8	8	16

Which of the pairs are isotopes ?

(Antara pasangan berikut yang manakah merupakan isotop?)

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

- 18 Diagram shows an incomplete Periodic Table.
(Rajah menunjukkan Jadual Berkala yang tidak lengkap)

		GROUPS																	
PERIODS	1		2											13	14	15	16	17	18
	2																		
	3			3	4	5	6	7	8	9	10	11	12						
	4	X																	

What is X ?

(Apakah X?)

- A Non-metal
(Bukan logam)
- B Noble gas
(Gas Nadir)
- C Transition element
(Unsur peralihan)
- D Metal
(Logam)
- 19 The table shows some physical properties of elements X, Y and Z.
(Jadual menunjukkan sebahagian sifat fizikal bagi unsur X, Y dan Z)

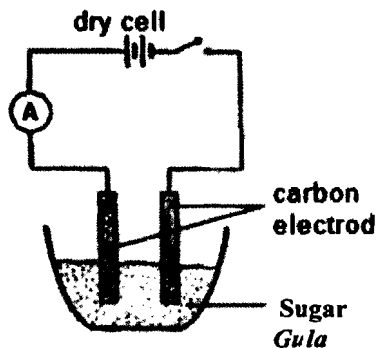
Element Bahan	Melting point ($^{\circ}\text{C}$) Takat lebur	Electrical conductivity in Kekonduksian elektrik dalam	
		Solid state Keadaan pepejal	Molten state Keadaan lebur
X	115	Poor	Poor
Y	800	Poor	Good
Z	2 100	Good	Good

What are substances X, Y and Z ?

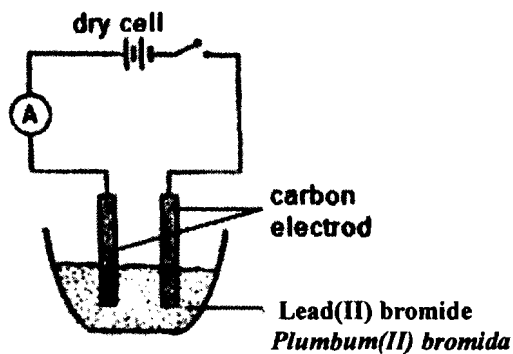
(Apakah bahan X, Y dan Z?)

- | | X | Y | Z |
|---|----------|----------|----------|
| A | Molecule | Atom | Ion |
| B | Molecule | Ion | Atom |
| C | Atom | Molecule | Ion |
| D | Ion | Atom | Molecule |

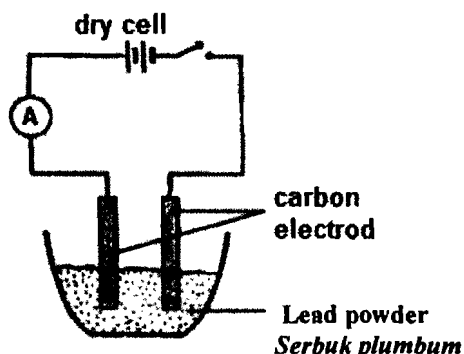
- 20 Which of the following apparatus set-up shows the deflection of Ammeter needle ?
(Antara susunan radas berikut, yang manakah menunjukkan pesongan jarum ammeter?)



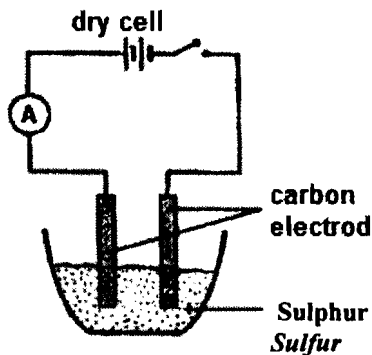
A



B



C



D

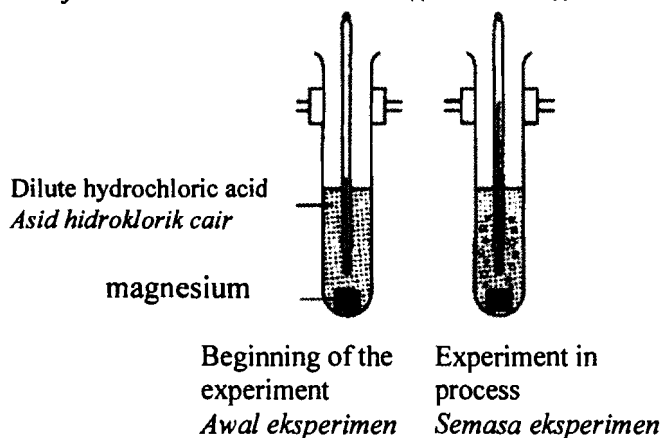
- 21 Liquid M has boiling points of 78°C and liquid N has boiling point of 100°C . How to obtain liquid M from the mixture of the two liquids?
(Cecair M mempunyai takat didih 78°C dan takat didih cecair N 100°C . Bagaimanakah cara untuk mendapatkan cecair M daripada campuran kedua-dua cecair tersebut?)

- A Filtration
(Penurasan)
- B Crystallization
(Penghabluran)
- C Distillation
(Penyulingan)
- D Evaporation
(Penyejatan)

22 Which of the following example is involved in a chemical change ?
(Antara contoh yang berikut yang mana terlibat dengan perubahan kimia?)

- A Combustion of petrol in a car
(Pembakaran petrol di dalam sebuah kereta)
- B Evaporation of water on a hot day
(Sejatan air pada hari panas)
- C Sublimation of iodine crystals to iodine vapour
(Pemejalwapan hablur iodin kepada wap iodine)
- D Crystallisation of a salt from a saturated salt solution
(Pemhabluran garam dari larutan tepu garam)

23 Diagram shows a reaction between magnesium and dilute hydrochloric acid.
(Rajah menunjukkan tindakbalas antara magnesium dengan asid hidroklorik cair)



What type of reaction is involved in this experiment ?
(Apakah jenis tindakbalas yang terlibat dalam eksperiment ini?)

- A Oxidation
(Pengoksidaan)
- B Exothermic
(Eksotermik)
- C Endothermic
(Endotermik)
- D Neutralisation
(Peneutralan)

24 The following information shows about metals P, Q and R.
(Maklumat berikut tentang logam P, Q dan R)

- Metal P reacts vigorously with cold water
(Logam P bertindakbalas cergas dengan air sejuk)
- Metal Q does not reacts with cold water or steam
(Logam Q tidak bertindakbalas dengan air sejuk atau stim)
- Metal R reacts with steam but not with cold water
(Logam R bertindakbalas dengan stim tapi tidak dengan air sejuk)

Which is the correct ascending order of reactivity of metals **P**, **Q** and **R**?
(Urutan menaik yang manakah betul tentang kereaktifan logam **P**, **Q** dan **R**)

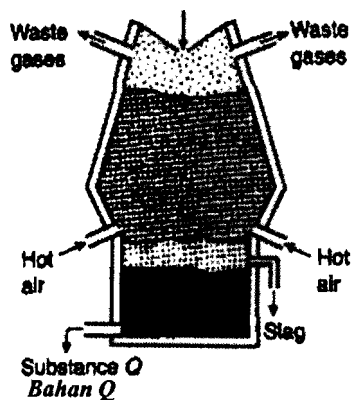
- A P, Q, R
- B Q, R, P
- C R, Q, P
- D Q, P, R

- 25 Diagram shows part of reactivity series of metals.
Which of the following **A**, **B**, **C** or **D** is the position of carbon?
(Rajah menunjukkan sebahagian siri kereaktifan logam.
Antara **A**, **B**, **C** dan **D** yang manakah kedudukan karbon?)

Magnesium (Magnesium) **A** Aluminium (Aluminium) **B** Zinc (Zink) **C** Iron (Besi) **D** Tin (timah)

- 26 Diagram shows a blast furnace used for extracting a metal.
(Rajah menunjukkan sebuah relau bagas yang digunakan untuk menuliskan logam)

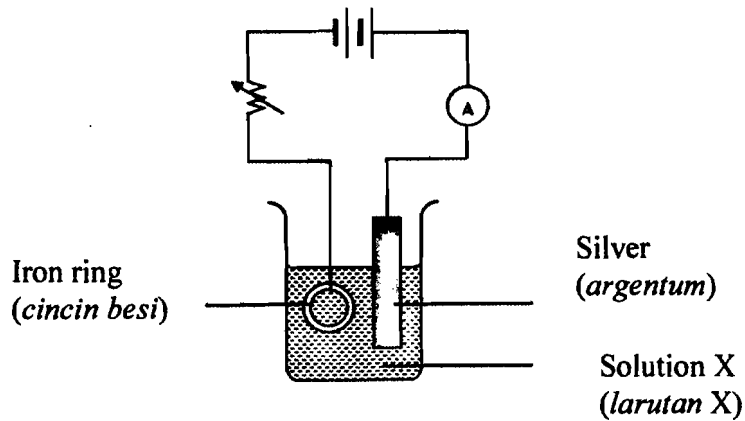
Tin (IV) oxide + substance P
(Timah (IV) oksida + bahan P)



What are substances **P** and **Q**?
(Apakah bahan **P** dan **Q**?)

	P	Q
A	Limestone (Air kapur)	Molten iron (Besi lebur)
B	Limestone (Air kapur)	Molten tin (Timah lebur)
C	Carbon (karbon)	Molten iron (Besi lebur)
D	Carbon (karbon)	Molten tin (Timah lebur)

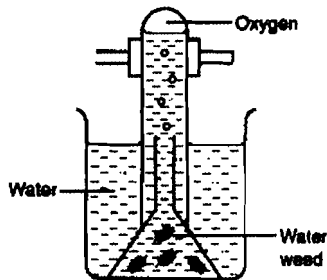
- 27 Diagram shows an electroplating of an iron ring.
(Rajah menunjukkan proses penyaduran cincin besi)



What is solution X?
(Apakah larutan X?)

- A Silver nitrate
(Argentum nitrat)
 - B Iron (II) sulphate
(Ferum(II) sulfat)
 - C Aluminium nitrate
(Aluminium nitrat)
 - D Copper (II) sulphate
(Kuprum(II) sulfat)
- 28 What type of battery is used in a handphone?
(Apakah jenis bateri yang digunakan dalam telefon bimbit?)
- A Alkaline battery
(Bateri alkali)
 - B Acid-lead battery
(Bateri asid-plumbum)
 - C Nickel-cadmium battery
(Bateri Nikel-cadmium)
 - D Silver oxide battery
(Bateri argentum oksida)

- 29 Diagram shows an experiment to study a process in green plants.
(Rajah menunjukkan satu eksperimen mengkaji satu proses dalam tumbuhan hijau)



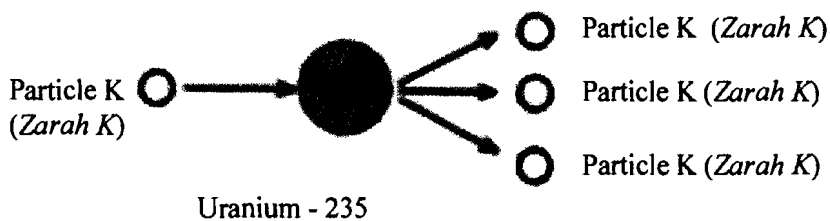
What is the condition for the above observation can only occur?
(Apakah keadaan yang membolehkan pemerhatian di atas berlaku?)

- A Some dilute sulphuric acid is added into the water
(asid sulfurik cair ditambah ke dalam air)
- B the set-up apparatus is placed in the dark
(set-up peralatan diletakkan dalam gelap)
- C the water weeds are replaced by a fish
(lumut air digantikan dengan ikan)
- D the set-up apparatus is placed under sunlight
(set-up peralatan diletakkan di bawah cahaya matahari)
- 30 The nucleus of a radioactive substance produce nuclear energy in a process called
(Proses nukleus bahan radioaktif menghasilkan tenaga nuclear dipanggil)
- A electrolysis
(elektrolisis)
- B radioactive decay
(pereputan radioaktif)
- C nuclear fission
(pembelahan nucleus)
- D exothermic
(Eksotermik)
- 31 The radioisotope used in archeology is
(Radioisotop yang digunakan dalam arkeologi ialah)
- A cobalt-60
(Kobalt-60)
- B uranium-235
(Uranium-235)
- C carbon-14
(Karbon-14)
- D oxygen-18
(Oksigen-18)

32 What is radioactive decay ?
(Apakah pereputan radioaktif?)

- A the nuclear fission of an atom.
(pembelahan nucleus sesuatu atom)
- B the loss of electrons from an atom.
(kehilangan electron sesuatu atom)
- C the increase in the nucleon number of an atom.
(penambahan nombor nukleon sesuatu atom)
- D the process of unstable nucleus breaking up into a more stable nucleus.
(proses pemecahan nukleus tak stabil kepada nukleus lebih stabil)

33 Diagram shows a part of the fission process of a radioactive substance.
(Rajah menunjukkan sebahagian daripada proses pembelahan nucleus suatu bahan radioakti)



What is particle K ?
(Apakah zarah K?)

- A proton
(proton)
- B electron
(elektron)
- C neutron
(neutron)
- D krypton atom
(atom krypton)

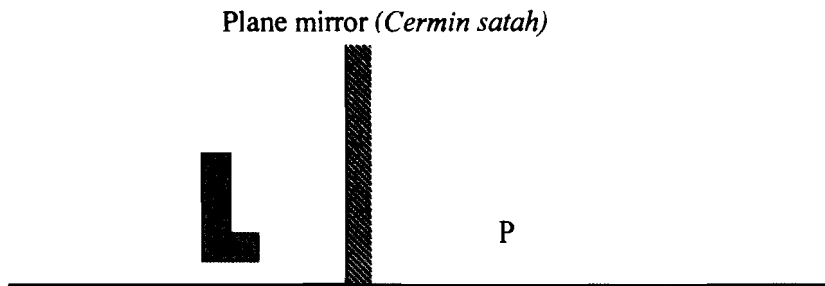
- 34 The table shows the penetration power of nuclear radiation.
(Jadual menunjukkan kuasa penembusan sinar radioaktif)

Radiation (Sinaran)	Can be blocked with (Boleh dihalang oleh)
P	Aluminium (Aluminium)
Q	Paper (Kertas)
R	Lead (Plumbum)

Arrange them in a sequence showing reducing penetration power.
(Susunkan kuasa penembusan sinar radioaktif tersebut secara menurun)

- A R, P, Q
B Q, R, P
C P, Q, R
D R, Q, P
- 35 Radioisotope X is used to study the process of photosynthesis in a plant. What is X?
(Radioisotop X digunakan untuk mengkaji proses fotosintesis dalam tumbuhan. Apakah X?)
- A Iodine-131
(Iodin-131)
B Carbon-12
(Karbon-12)
C Carbon-14
(Karbon-14)
D Cobalt-60
(Kobalt-60)
- 36 What is the main usage of nuclear energy in industries ?
(Apakah kegunaan utama tenaga nuclear dalam perindustrian ?)
- A preserve food
(mengawet makanan)
B disinfect germs
(membasmi kuman)
C generate electricity
(menjana tenaga elektrik)
D sterile equipment
(mensteril alatan)

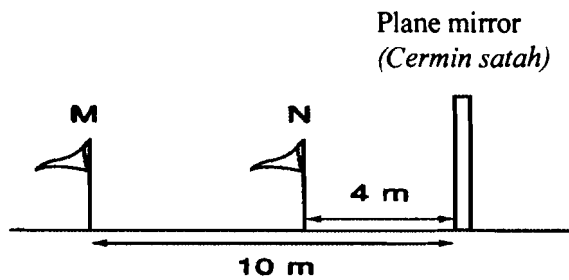
- 37 Diagram shows that letter L is placed in front of a plane mirror.
 (Rajah menunjukkan huruf L yang diletakkan di hadapan cermin satah)



Which of the following shows the image formed at P?
 (Manakah antara berikut menunjukkan imej yang terbentuk di P?)

- | | | | |
|---|--|---|--|
| A | | C | |
| B | | D | |

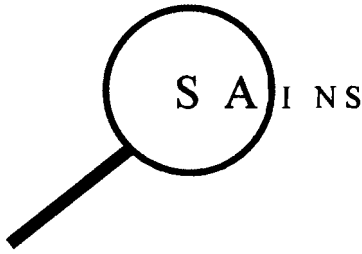
- 38 Diagram shows two flag posts M and N respectively at distances of 10 m and 4 m from a plane mirror.
 (Rajah menunjukkan dua dua bendera M dan N masing-masing pada jarak 10m dan 4m dari cermin satah)



What is the distance of the image of flag post M from the position of N?
 (Berapakah jarak antara imej bendera M dari kedudukan N?)

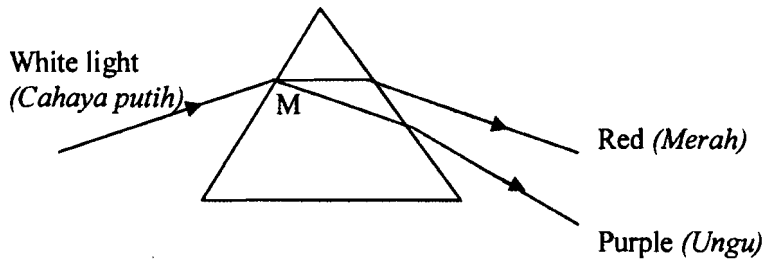
- A 4 m
- B 10 m
- C 14 m
- D 20 m

- 39 Diagram shows a magnifying glass .
(Rajah menunjukkan sebuah kanta pembesar)



What is the distance between the lens and the word **SAINS** so that the image formed will be as above
(Apakah jarak antara kanta dengan perkataan **SAINS** supaya imej seperti di atas)

- A Same as the lens focal length
(Sama dengan jarak focus kanta)
 - B Longer than the lens focal length
(Lebih besar daripada jarak focus kanta)
 - C Shorter than the lens focal length
(Lebih kecil daripada jarak focus kanta)
 - D Twice the lens focal length
(Dua kali jarak fokus kanta)
- 40 Diagram shows a beam of light passing through a prism.
(Rajah menunjukkan satu alur cahaya yang melalui sebuah prisma)

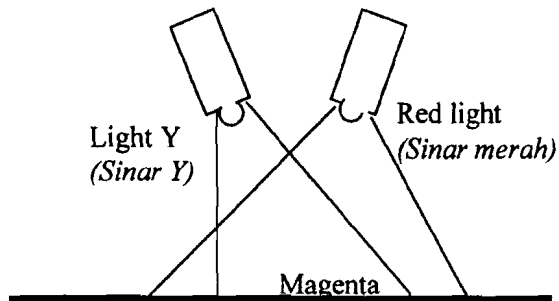


What is the process happen at M ?
(Apakah proses di M?)

- A Reflection
(Pantulan)
- B Dispersion
(Penyebaran)
- C Scattering
(Penyerakan)
- D Splitting
(Pemecahan)

- 41 What is the process that caused the blue sky phenomena during mid day?
(Apakah proses yang menyebabkan fenomena kebiruan langit di waktu tengah hari?)
- A Light reflection
(Pantulan cahaya)
 - B Light refraction
(Pembiasan cahaya)
 - C Light dispersion
(Penyebaran cahaya)
 - D Light scattering
(Penyerakan cahaya)

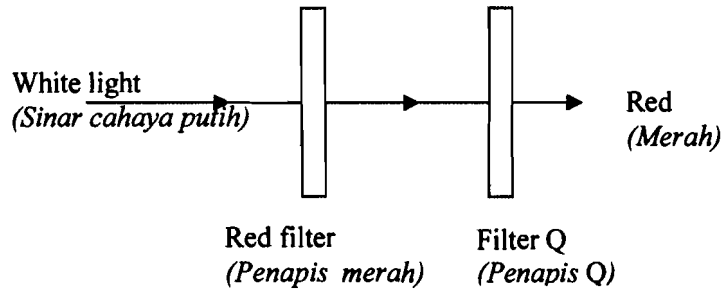
- 42 Diagram shows two spot light which produce red light and light Y.
(Rajah menunjukkan dua buah lampu yang memancarkan sinar merah dan sinar Y)



What is the colour of light Y ?
(Apakah warna sinar cahaya Y)

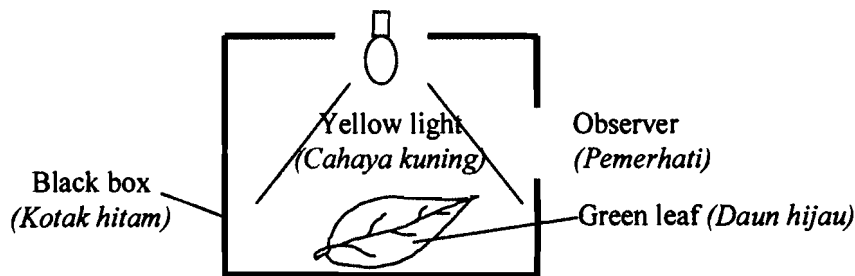
- A Blue
(Biru)
- B Green
(Hijau)
- C Yellow
(Kuning)
- D Cyan
(Sian)

- 43 Diagram shows a red filter and filter Q that are placed in front of a white light.
(Rajah menunjukkan penapis warna merah dan penapis Q diletakkan di hadapan sinar putih)



What is the colour of filter Q?
(Apakah warna penapis Q?)

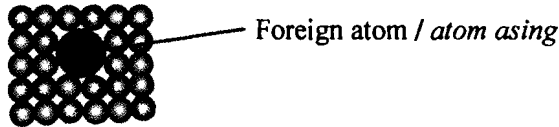
- A Cyan (Sian)
 - B Blue (Biru)
 - C Yellow (Kuning)
 - D Green (Hijau)
- 44 Diagram shows an experiment to study the subtraction of coloured lights
(Rajah menunjukkan eksperimen untuk mengkaji penolakan cahaya berwarna)



What is the colour of the leaf that will be seen by the observer?
(Apakah warna yang akan dilihat oleh pemerhati?)

- A Green (Hijau)
- B Black (Hitam)
- C Red (Merah)
- D Yellow (Kuning)

- 45 Diagram shows the arrangement of atoms in a substance.
(Rajah menunjukkan susunan atom dalam sesuatu bahan)



Which of the following substance has the same arrangement of atoms as in figure ?
(Bahan yang manakah mempunyai susunan atom yang sama seperti rajah ?)

- A steel
(*keluli*)
- B iron
(*besi*)
- C copper
(*kuprum*)
- D aluminium
(*aluminium*)
- 46 What is brass made of?
(*Apakah bahan yang terkandung dalam loyang?*)
- A lead and copper.
(*plumbum dan kuprum*)
- B tin and lead.
(*timah dan plumbum*)
- C copper and zinc
(*kuprum dan zink*)
- D copper and carbon
(*kuprum dan karbon*)
- 47 What is the purpose of adding carbon to iron in steel ?
(*Apakah tujuan penambahan karbon kepada besi dalam keluli?*)
- A lower the melting point steel
(*merendahkan takat lebur keluli*)
- B make the metal even softer
(*menjadikan logam lebih lembut*)
- C prevent the flow of electric current among the atoms
(*menghalang pengaliran arus elektrik antara atom-atom*)
- D prevent the iron atoms from sliding among one another.
(*menghalang atom-atom besi dari menggelungsur antara satu sama lain*)

- 48 Which of the following statements is characteristic of ammonia?
(*Antara berikut yang manakah merupakan ciri ammonia?*)
- A Acidic gas
(*bersifat asid*)
 - B Not soluble in water
(*tidak larut di dalam air*)
 - C Have a sweet smell
(*berbau wangi*)
 - D Contains nitrogen and hydrogen.
(*mengandungi nitrogen dan hydrogen*)
- 49 Which of the following conditions is caused by excessive exposure to radiation?
(*Antara berikut, yang manakah kesan akibat pendedahan kepada radioaktif yang berlebihan?*)
- A Weak bone
(*Lemah tulang*)
 - B Tuberculosis
(*Tibi*)
 - C Night blindness
(*Rabun malam*)
 - D Gene mutation
(*Mutasi gen*)
- 50 What cause acid rain?
(*Apakah yang menyebabkan hujan asid?*)
- A ozone
(*ozon*)
 - B carbon monoxide
(*karbon monoksida*)
 - C sulphur dioxide
(*sulfur dioksida*)
 - D carbon dioxide
(*karbon dioksida*)

KERTAS SOALAN TAMAT