http://banksoalanspm.blogspot.com/

1511/1
SAINS / P
Kertas 1
Sept 2011
1¼ jam

SAINS
Tingkatan 5

Kertas 1
Setu jem lima belas minit

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU

1. *Kertas soelen ini adalah dalam dwibahasa.*
2. *Soalan dalem behase Inggeris mendehului soalan yang sepadan delam bahasa Melayu.*

INFORMATION FOR CANDIDATES
MAKLUMAT UNTUK CALON

1. This question paper consists of **50** questions
   *Kertes soelan ini mengandungi **50** soalan.*

2. Answer **all** questions
   Jawab semue soalan

3. Each question is followed by four alternative answers, **A, B, C** or **D**. For each question, Choose one answer only. Blacken your answer on the objective answer sheet provided.
   *Tiap-tiep soelen diikuti oleh empet pilihan jawepan, iaitu **A, B, C**, dan **D**. bagi satiap soalan pilih setu jawapen sahaje. Hitemken jewapan anda pada kartas jewepan objektif yang disedieken.*

4. If you wish to change your answer, erase the blackened mark that you have made. Then blacken the naw answer.
   Jika anda hendak menuker jawepan, pademkan tande yang telah dibuat.Kamudian hitamkan jawapan yang baru.

5. The diagrems in the questions providad are not drewn to scale unless stated.
   Rajah yang mangiringi soalan tidak dilukis mengikut skala kecuali dinyatakan

6. You may use a non-programmable scientific calculator.
   Ande dibenarkan menggunakan kalkulator seintifik yeng tidek boleh diprogram.

1 Diagram 1 shows the endocrine glands. Which of the following glands **A, B, C or D** is the pancreas?
*Rajah 1 menunjukkan kelenjar endokrin. Antara **A, B, C dan D** yang manakah kelenjar pankreas?*

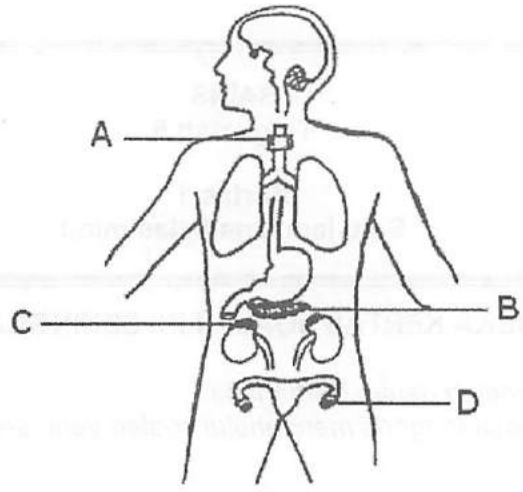


Diagram 1
Rajah 1

2 Diagram 2 shows a part of the human nervous system.
Rajah 2 menunjukkan sebahagian sistem saraf manusia.

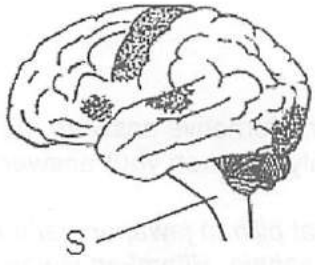


Diagram 2
Rajah 2

What is labelled S?
Apakah yang berlabel S?

A Cerebrum
Serebrum

B Cerebellum
Serebelum

C Spinal cord
Saraf tunjang

D Medulla oblongata
Medula oblongata

3 Which of the following is correct about the nervous system and the endocrine system?
Antara berikut yang manakah benar tentang perbezaan sistem saraf dan sistem endokrin?

	Nervous system *Sistem saraf*	Endocrine system *Sistem endokrin*
A.	Slower response *Gerakbelas lambat*	Faster response *Gerakbalas capat*
B.	One part of the body responds *Satu bahagian bedan yang bergerakbalas*	Many parts of the body respond *Banyak bahagian badan yang bergerakbalas*
C.	Effects last for long period of time *Kesan untuk jangka masa panjang*	Effects lest for a short period of time *Kesan untuk jangka masa pendek*
D.	Information is sent in the form of hormone *Maklumat dihantar dalam bentuk hormon*	Information is sent in the form of impulse *Maklumat dihantar dalam bentuk impuls*

4 What will happen if gland X secret more hormone?
Apakah yeng akan berlaku jika kelenjar X merembeskan hormon berlebihan?

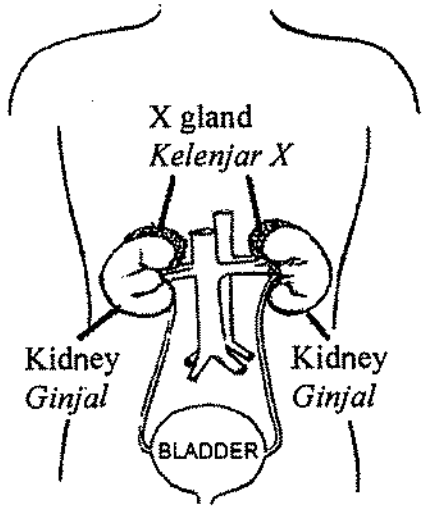


Diagram 3
Rajah 3

A. Decreesed sweating
Mengurangkan perpeluhen

B. Decreased heart rate
Mangurangkan kadar denyutan jantung

C. Decreased breathing rate
Mengurengkan keder pemafasan

D Increased supply of glucose in the blood
Menambahkan bakalan glukosa dalem darah

5 Which of the following is caused by gene mutation?
Antara berikut yang manakah disababkan oleh mutasi gan ?

A Haemophilia
Hamofillia

B Down syndrome
Down Sindrom

C Turner's syndrome
Sindrom Turnar

D Klinafelter's syndrome
Sindrom Klinefeltar

6 Which of the following ara the chromosomes found in a woman's foetus?
Manakah diantara kromosom berikut terdapat dalam fetus perempuan?

A 22 + X

B 22 + Y

C 44 + XY

D 44 + XX

7 Diagram 4 shows the inheritance of height in a type of plant.
Rajah 4 menunjukkan pewarisan sifat tinggi bagi sejenis tumbuhan.

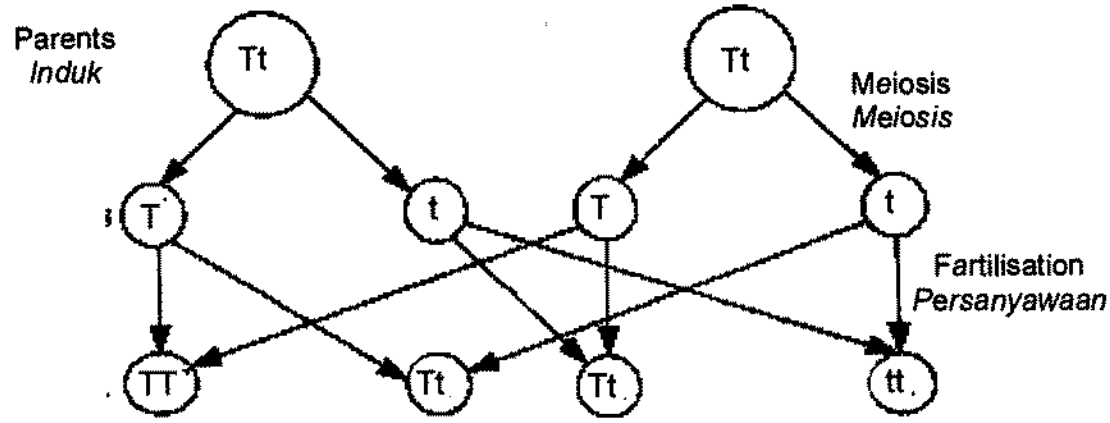


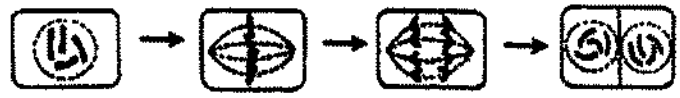
Diagram 4
Rajah 4

What is the ratio of the number of tall young plants to the number of dwarf young plants in the first generation?

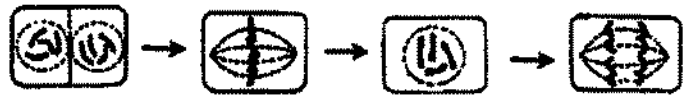
Berapakah nisbah bilangan anak pokok tinggi kepada bilangan anak pokok kerdil dalam generasi pertama?

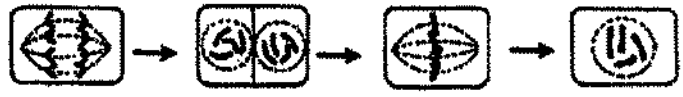
A 1 : 2 B 2 : 1 C 1 : 3 D 3 : 1

8 Which of tha following is the correct sequence of the mitosis stages?
Antara yang berikut, yang manakah urutan peringkat mitosis yang betul?

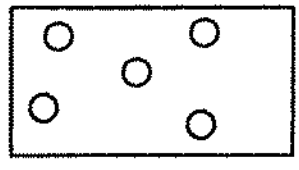
A 

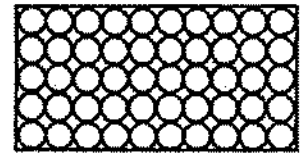
B 

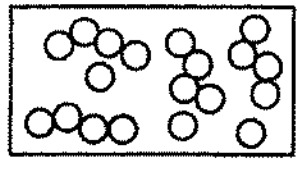
C 

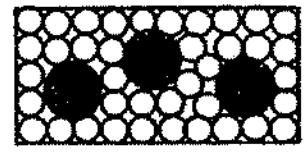
D 

9 Which of tha following **A, B, C** or **D** reprasents liquid particles?
*Manakah antara **A, B, C** etau **D** berikut mewakili zarah ceceir?*

A 

C 

B 

D 

10 Diagram 5 shows the structure of an atom. Which of the following **A, B, C** or **D** is a proton?
*Rajah 5 menunjukkan struktur satu atom. Manakah antara **A, B, C** atau **D** berikut adalah proton?*

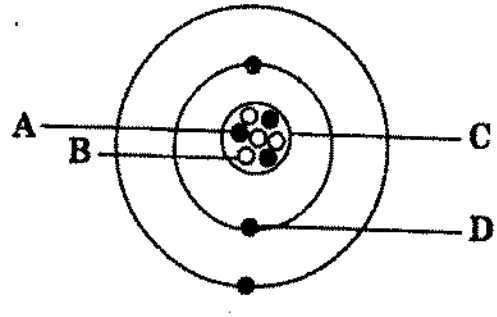


Diagram 5
Rajah 5

11 Choose the corract match batwaan the chanqa in tha state of matter and its procass.
Pilih padanan yang betul tantang perubehan kaadeen jirim dan *prosesnya.*

	Changa in the state of matter ***Perubahan keadaan jirim***	**Procass** ***Proses***
A	Solid *Papajal* → Liquid *Cacair*	Boiling *Pendidihan*
B	Liquid *Cecair* → Solid *Papajal*	Freezing *Pembekuan*
C	Gas Gas → Liquid *Cecair*	Sublimation *Pamajalwapan*
D	Solid *Pepejal* → Gas *Gas*	Condensation *Kondensasi*

12 Table 1 shows tha proton number and the number of neutrons of atom P.
Jadual 1 manunjukkan nombor proton dan bilangan neutron bagi atom P.

Proton numbar ***Nombor proton***	**Numbar of nautrons** ***Bilangan nautron***
8	9

Tabla 1
Jadual 1

What is tha nucleon number of atom P?
Barapakah nombor nuklaon bagi atom P?

A 8

B 9

C 17

D 72

13 Which of the following is a chemical change?
Antara yang benikut, yang manakah perubahan kimia?

A Melting of ice
Palaburan ais

B Dissolving sugar in water
Melarutkan gula dalam air

C Burning of magnesium ribbon
Pembakaran pita magnesium

D Extraction of salt from sea water

14 Diagram 6 shows part of tha reactivity series of matals.
Rajah 6 menunjukkan sabahagian daripada siri kareaktifan logam.

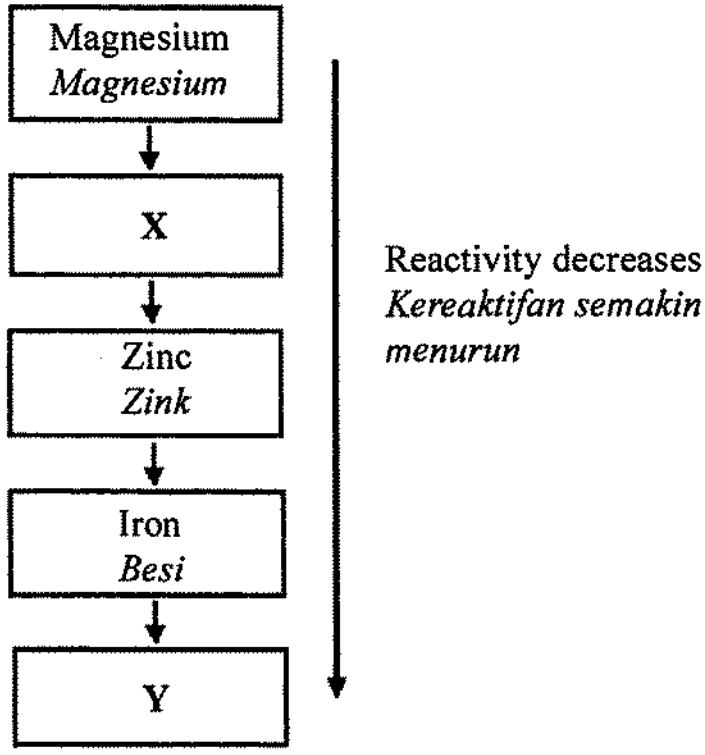


Diagram 6
Rajah 6

What do X and Y reprasent?
Apakah yang mewakili unsur X dan Y?

	X	Y
A	Tin *Stanum*	Copper *Kuprum*
B	Lead *Plumbum*	Aluminium *Aluminium*
C	Sodium *Natrium*	Lead *Plumbum*
D	Aluminium *Aluminium*	Tin *Stanum*

15 Table 2 shows the initial temperature and final temperature of reaction P, Q, R and S.
Jadual 2 manunjukkan suhu awal dan suhu akhir tindakbalas bagi P , Q , R dan S .

Reaction *Tindak balas*	Temperature (°C) *Suhu (°C)*	
	Initial *Awal*	Final *Akhir*
P	28	38
Q	28	28
R	28	20
S	28	30

Table 2
Jadual 2

Which reaction is an exothermic reactions ?
Tindekbalas yang manakah marupakan tindakbalas eksotermik ?

A P and S
P den S

B Q and R
Q dan R

C R and S
R dan S

D P and R
P dan R

16 The following information shows the characteristics of battery X.
Maklumat berikut manunjukken ciri-ciri batari X.

- Used in mobile phone
  Digunakan dalam talefon mudeh alih
- Rechargeable
  Boleh dices semula

What is X?
Apakah X?

A Dry cell
Sel kering

B Mercury cell
Sal merkuri

C Nickel cadmium battery
Bateri nikel kadmium

D Lead acid accumulator
Akumulator asid plumbum

17 Which of the following fields uses carbon-14?
Antara bidang berikut, yang manakah menggunakan karbon-14?

A Agriculture
Pertanian

B Industry
Industri

C Medicine
Perubatan

D Archaeology
Arkeologi

18 Diagram 7 shows radioactive radiations passing through an electric field.
Rajah 7 menunjukkan sinaran radioaktif yang melalui medan elektrik.

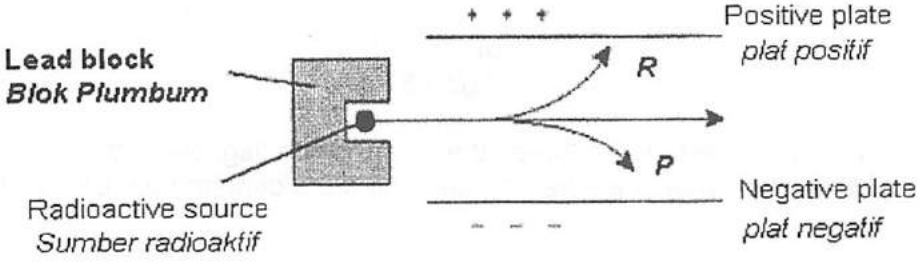


Diagram 7
Rajah 7

What is P?
Apakah P?

A X-ray
Sinar X

B Gamma ray
Sinar gama

C Alpha ray
Sinar alfa

D Beta ray
Sinar beta

19 Diagram 8 shows a boy standing between a plana mirror and a flagpole. Distance of the boy from the mirror is 1.5 m and its distance from the flagpole is 2.0 m.
Rajah 8 manunjukkan seorang budak lelaki sedang berdiri di antara satu cermin satah dengan satu tiang bendera. Jarak budak lalaki dari cermin ialah 1.5 m dan jaraknya dari tiang bandera ialah 2.0 m

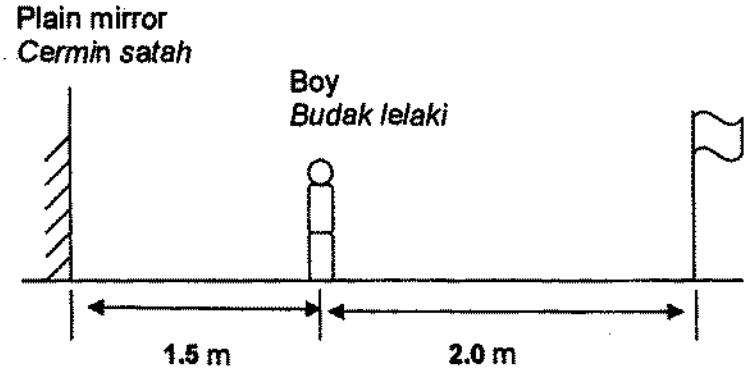


Diagram 8
Rajah 8

What is the distance between the image of the flagpole and the boy ?
Barapakah jarak di antara imej tiang bandara dengan budak lelaki itu ?

A 1.5 m

B 3.5 m

C 5.0 m

D 7.0 m

20 Which of the following optical instrument uses prism?
Antara alat optik berikut, yang manakah manggunakan prisma?

A Camera
Kamera

B Periscope
Periskop

C Telescope
Teleskop

D Microscope
Mikroskop

21 Diagram 9 shows a green light being shined onto a yellow shirt.
Rajah 9 menunjukkan cahaya hijau yang dipancarkan ke atas kemeja kuning

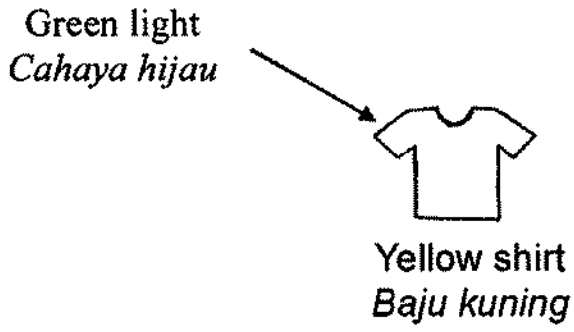


Diagram 9
Rajah 9

The shirt will appear
Kamaja itu akan kelihatan

A red
marah

B blue
biru

C green
hijau

D dark
gelap

22 If a white shirt is to be turned into a green colour, which colour dyes must be used?
Jika sehelai kamaja putih ditukar manjadi warna hijau, pewarna yang manakah perlu digunakan?

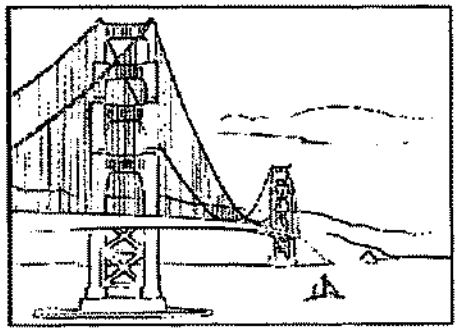
A Yellow and blue
Kuning dan biru

B Red and blue
Merah dan biru

C Red and yellow
Marah dan kuning

D Red, yellow and blue
Marah, kuning dan biru

23 Diagram 10 shows a bridge made of steel.
Rajah 10 menunjukkan jambatan yang diperbuat daripada keluli .



Steel bridge
Jambatan keluli

Diagram 10
Rajah 10

What is the composition of the bridge?
Apakah komposisi jambatan itu?

A Tin and antimony
Timah dan antimoni

B Iron and carbon
Besi dan karbon

C Copper and zinc
Kuprum dan zink

D Copper and nickel
Kuprum dan nikel

24 Which substances is used to make nitric acid and fartilisers?
Bahan yang manakah digunakan untuk membuat asid nitrik dan baja?

A Sulphuric acid
Asid sulfurik

B Alcohol
Alcohol

C Ester
Ester

D Ammonia
Ammonia

25 Which microorganism reproduces by formation of spores?
Mikroorganisma yang manakah membiak malalui penghasilan spora?

A Fungi
kulat

B Paramecium
Peramesium

C Virus
Virus

D Algae
Alge

26 What is the optimum temperature for microorganisms to grow and reproduce ?
Apakah suhu optimum bagi mikroorganisme untuk tumbuh dan membiak ?

A 100^0C

B 70^0C

C 37^0C

D 0^0C

27 Diagram 11 shows the roots of a leguminous plant.
Rajah 11 menunjukkan akar pokok kekacang

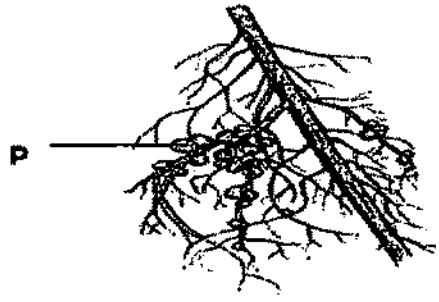


Diagram 11
Rajah 11

What bacteria is found in P?
Bacteria apakah yang dijumpai di dalam P?

A Nitrifying bacteria
Bakteria penitritan

B Nitrogen-fixing bacteria
Bacteria pengikat nitrogen

C Parasitic bacteria
Bacterie parasit

D Saprophytic bactaria
Bacterie saprofit

28 Diagram 12 shows a vector.
Rajah 12 menunjukkan satu vektor.

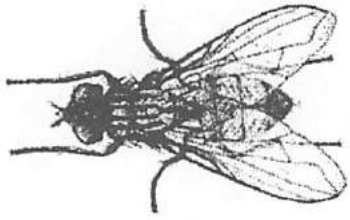


Diagram 12
Rajah 12

Which method can be used to control the population of this vector?
Cara yang manakah boleh digunakan untuk mengawal populasi vector ini?

A Spray insecticide on the surface of water.
Sembur racun serangga pada permukaan air.

B Rear guppy in aquarium.
Bela ikan gapi dalam akuarium

C Fix mosquito net on doors and windows.
Pasang jaring nyamuk pada pintu dan tingkap

D Dispose of garbage in covered garbage bins.
Membuang sampah ke dalam tong sampah yang bertutup.

29 Table 3 shows the calorific values of three types of food.
Jadual 3 menunjukkan nilai kalori bagi tiga jenis makanan.

Food *makanan*	Calorific value / *nilai kalori*(KJ /g)
Bread *roti*	10.12
Hard boiled egg *telur rebus*	6.59
Milk *susu*	2.68

Table 3
Jadual 3

A pupil take 20 g of bread ,10 g of hard boiled egg and 100 g of milk for his breakfast. What is the total energy consumed?
Seorang murid mengambil 20 g roti, 10 g telur rebus dan 100g susu untuk sarapannya. Berapakah jumlah tenaga yang diperolehinya?

A 0.85 kJ

B 19.39 Kj

C 193.90 kJ

30 Which of the following factor can causa anorexia narvosa?
Manakah antara faktor berikut adalah panyebab anoraksia narvosa?

A Psychological problem
Masalah psikologi

B Iron deficiency
Kakurangan zat basi

C Protein deficiancy
Kekurangan protein

D Malnutrition
Malnutrisi

31 The function of Nitrogen-fixing bacteria in the nitrogen cycle is to
Fungsi Baktaria pangikat nitrogan dalam kitar nitrogan ialah untuk

A convert nitrates to nitrogen
menukarkan nitrat kepada nitrogen

B convert nitrites to nitratas
menukarkan nitrit kepada nitrat

C convart ammonium ions to nitrites
menukarkan ion amonium kapada nitrit

D convart nitrogen to nitrates
manukarkan nitrogen kapada nitrat

32 Which gas is involved in the greenhouse effact?
Apakah gas yang tarlibat dalam kesan rumah hijau?

A Ammonia
Ammonia

B Carbon dioxide
Karbon diokside

C Sulphur dioxide
Sulfur dioksida

D Nitrogen dioxide
Nitrogan dioksida

33 Diagram 13 rapresents a food web in an ecosystem.
Rajah 13 menunjukkan siratan makanan dalam satu ekosistam

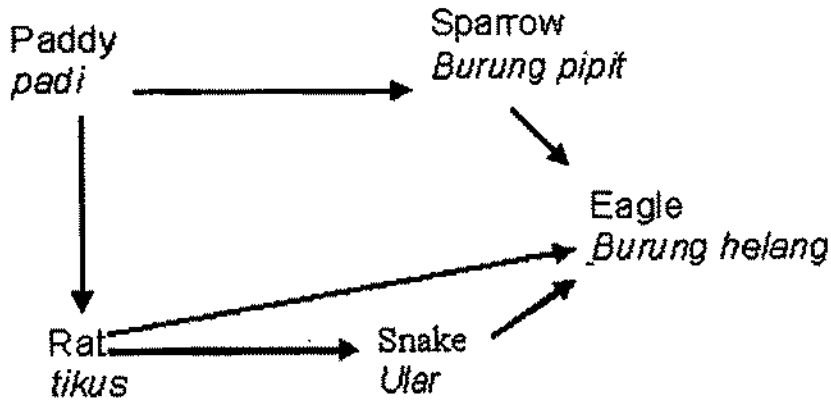


Diagram 13
Rajah 13

Which of the following is a secondary and tertiary consumer?
Antara yeng barikut yang manakah marupakan pangguna kadua dan pengguna ketiga?

A Eagle
Burung halang

B Sparrow
Burung pipit

C Snake
Ular

D Rat
Tikus

34 The diagram 14 shows part of carbon cycle.
Rajah 14 menunjukkan sabahagian kitar karbon.

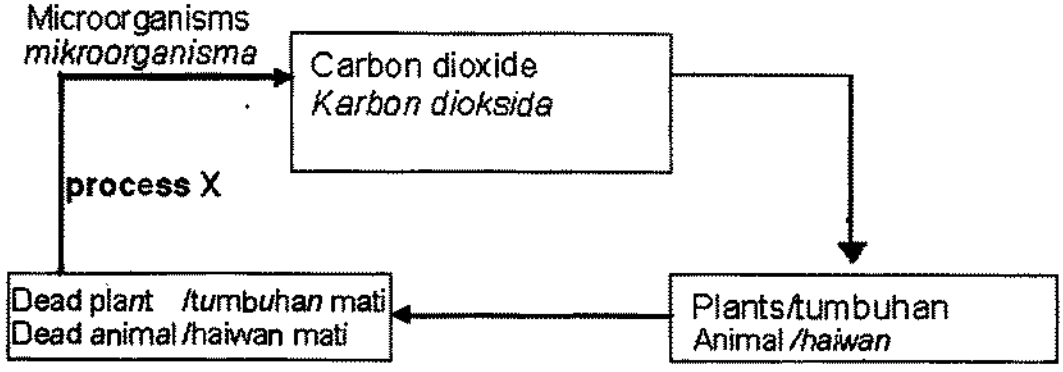


Diagram 14
Rajah 14

What is process X?
Apakah proses X?

A Decomposition
Penguraian

B Nutrition
Pemakanan

C Respiration
Raspirasi

D Photosynthesis
Fotosintesis

35 The function of ozone layer is to
Fungsi lapisan ozon ialah untuk

A protect living organism from the bad effect of ultraviolet rays.
melindungi organisma daripada kesan buruk sinaran ultra ungu.

B absorb a certain amount of sunlight to reduce tha temperature of the earth.
manyarap sabahagian daripada cahaya matahari untuk mengurangkan suhu bumi.

C reflex sunlight to prevent green house effect.
memantulkan sineran cahaya matahari untuk mengelakkan kesan rumah hijau.

D avoid excess heat from reaching the earth which may cause global warming.
mangelakkan haba berlebihan sampai ke bumi yang manyababkan pamanasan global.

36 Which of the following is *an* organic compound from animals?
Manekah antara barikut marupakan sabatian organik *daripada haiwan ?*

A Cotton
Kapas

B Latex
Latek

C Egg
telur

D Silk
Sutara

37 Tha following word equation shows a chemical reaction.
Parsamaan parkataan barikut menunjukkan tindak balas kimia.

Alcohol + organic acid ⟶ K + weter
Alkohol + asid organic ⟶ *K + air*

What is K ?
Apakah K ?

A Ethanol
Etanol

B Ammonia
Ammonia

C Ester
Estar

D Urea
Urea

38 What causes the coagulation of latex aftar leaving it for a day?
Apakah yang manyababkan gatah mambaku apabila ditinggalkan selama satu hari?

A Oxygen in the air oxidizes the latex.
Oksigan dalam udara mangoksidkan gatah.

B The sun light dries up the content of watar in the latax.
Cahaya matahari mangaringkan kandungan air dalam susu getah.

C Bacteria in the atmosphere react on the latex producing acid.
Bakteria dalam udara bertindak ke atas gatah dan manghasilkan asid.

D Fungi secreta enzyme on the latex and destroy the structure of the latex.
Fungi manghasilkan anzim dalam susu gatah dan merosakkan struktur susu getah.

39 Diagram 15 show an experiment to test the gas produced from the fermentation of glucose
Rejeh 15 menunjukkan eksperiment untuk menguji gas yeng dihasilkan deripeda panapeien glukose.

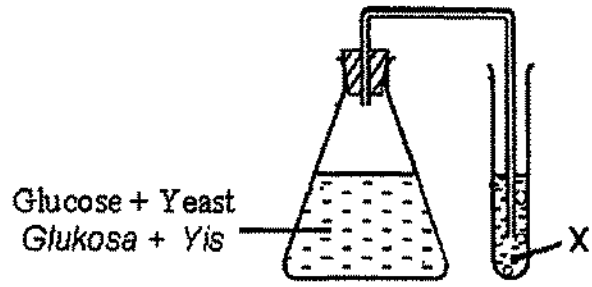


Diagram 15
Rajah 15

What is **X** and what can be observed?
*Apakah lerutan **X** dan yang dapat diperhatikan ?*

	X	Observation *Pemerhatian*
A	Sodium hydroxide *Netrium Hidroksida*	Cloudy *Keruh*
B	Lime water *Air kepur*	Cloudy *Keruh*
C	Sodium hydroxide *Natrium Hidrokside*	Colourless *Jamih*
D	Lime water *Air kepur*	Colourless *Jemih*

40 Diagram 16 shows a passenger in a bus which stops suddenly.
Rajah 16 menunjukkan seorang penumpang apabila bas itu tiba-tiba berhenti.

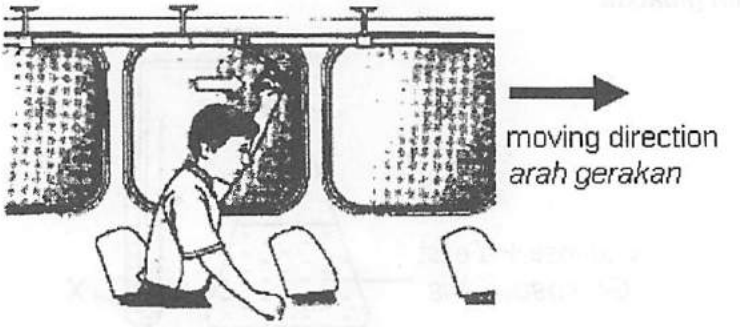


Diagram 16
Rajah 16

What is the causes of that phenomenon?
Apakah yang menyebabkan kejadian tersebut?

A Mass
Jisim

B Force
Daya

C Inertia
Inersia

D Weight
Berat

41 Diagram 17 shows the engine of a rocket.
Rajah 17 menunjukkan enjin sebuah roket.

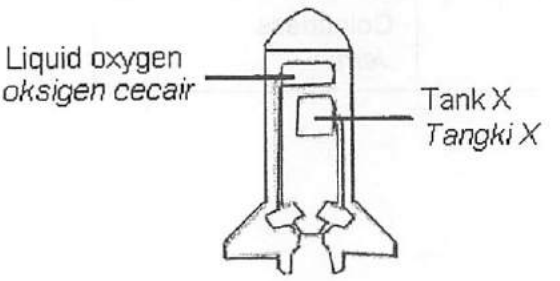


Diagram 17
Rajah 17

What is inside tank X?
Apakah yang terdapat dalam tangki X?

A Diesel
Diesel

B Kerosene
Kerosin

C Naphta gas
Gas nafta

D Hydrogen
Hidrogen

42 Diagram18 shows a four stroke petrol engine.
Rajah 18 menunjukkan enjin petrol empat lejang.

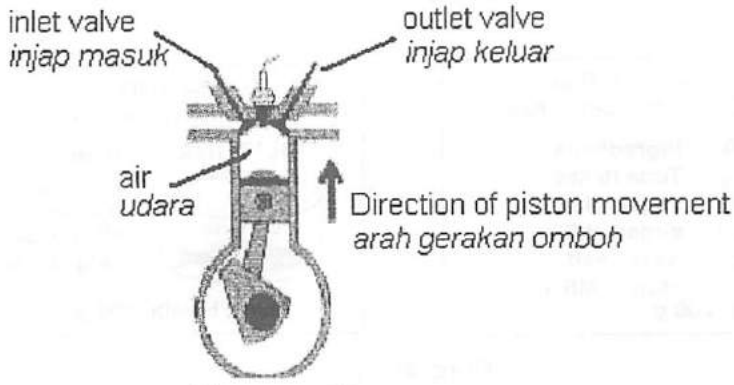


Diagram 18
Rajah 18

What stroke is shown by the diagram?
Apakah peringkat lejang itu?

A Exhaust stroke
Lejang ekzos
B Power stroke
Lejang kuasa
C Compression stroke
Lejang mampatan
D Intake stroke

43 What is the purpose of freezing food?
Apakah tujuan penyejukbekuan makanan?

A Harden food
Mengeraskan makanan
B Improve the appearance of food
Memperbaiki rupa bentuk makanan
C Slow down the microorganisms' activities
Merencatkan aktiviti mikroorganisma
D Improve the quality and taste of food
Menambah kualiti dan keenakan makanan

44 Diagram 19 shows an example of a food label that does not follow the regulation of the Food Act.
Rajah 19 manunjukkan contoh label makanan yang tidak mematuhi Akte Makanan.

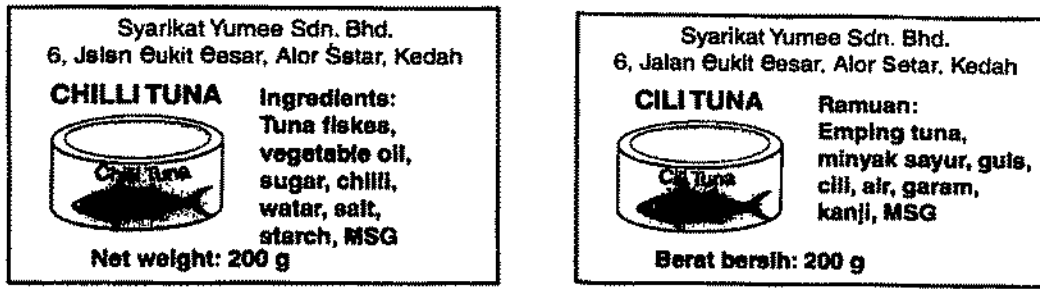


Diagram 19
Rajah 19

What is the information that is **not** labelled?
*Apakah maklumat yang **tidak** dilabelkan?*

A Type of food
Jenis makanan

B Expired date
Tarikh luput

C Food contents
Kandungan makanan

D Quantity of food
Kuentiti makenan

45 Pak Man has a banana tree which bears big and tasty fruits. He wants to breed the offspring in a large quantity in a short period of time. Which of the following methods can be used?
Pak Man mempunyai sepohon pisang dengan buah yang bersaiz besar dan rasanya enak. Dia ingin memperbanyakkan anak pokok pisang itu dalam masa yang singkat. Antara kaedeh bankut yang manakah boleh digunakan ?

A Tissue culture
Kultur tisu

B Stem cutting
Keratan batang

C Bud-grafting
Cantuman tunas

D Seed germination
Percambahan biji benih

46 Which of tha following is a thermosatting plastic?
Antara yang berikut yang manakah plastik termoset?

A Bakelite
Bekelit

B Polythene
Politena

C Perspax
Perspek

D Polystyrene
Polistirena

47 Which method is most suitable for disposing of non-biodegradable plastic?
Kaadah manakah yeng paling sesuei bagi pelupusen plastik yang tidak terbiodegresi?

A Buried in the ground
Ditenam dalem teneh

B Burnt in en incinerator
Dibaker dalem insinerator

C Thrown into the river or saa
Buang *delam sungai atau laut*

D Exposed to sunlight
Didadahken kepada cehaye mataheri

48 The information shows tha properties of a type of plastic.
Meklumat manunjukkan sifat-sifat sajenis plastik.

- can be remoulded repeatedly
  bolah diacuken berulang kali
- do not have cross-linkege polymer
  tidak *mempunyai polimer berangkai silang*

Which of the following shows the above properties?
Antara barikut manakeh yang menunjukken sifat di ates?

A Bakalite
Bekelit

B Perpex
Perspeks

C Melamine
Melamine

D Epoxy resin
Palakat epoksi

49 What is the definition of radio waves frequency?
Apakah takrifan bagi frekuansi gelombang radio?

A The highest point of wave
Titik tertinggi gelombang

B The distance between two consecutive crests
Jarak di antara dua puncak berturutan

C The distance batwean initial position and crest
Jarak di antara kedudukan asal dan puncak

D The number of complete waves in one second
Bilangan gelombang langkap dalam satu saat

50 Diagram 20 shows a radio transmitter system.
Rajah 20 manunjukkan suatu sistam pamancar radio.

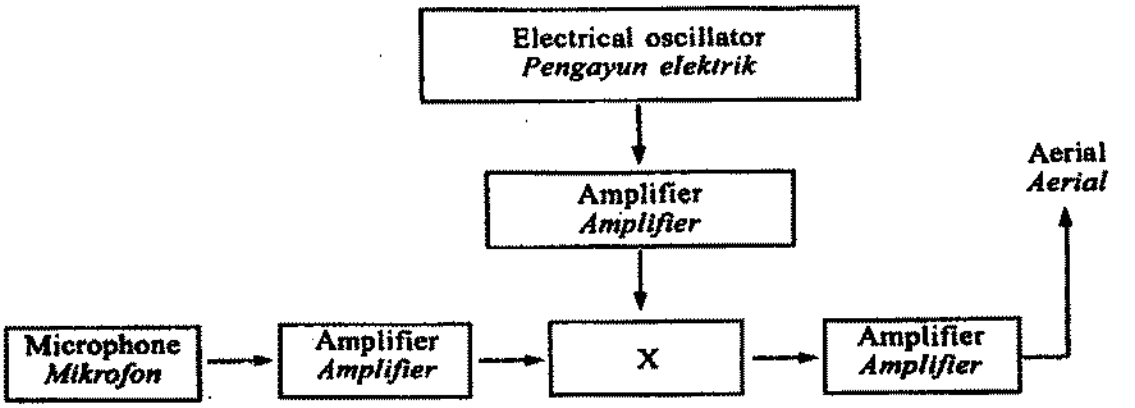


Diagram 20
Rajah 20

What is X?
Apakah X?

A Modulator
Modulator

B Tuning circuit
Litar panala

C Detector circuit
Litar pengesan

D Loud-speaker
Pambasar suara

END OF QUESTION PAPER
KERTAS SOALAN TAMAT

1511/2
SAINS / P
Kertas 2
September 2011
2 ½ JAM

SAINS

Tingkatan 5

Kertas 2

Dua jam tiga puluh minit

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU.

1. Kertas soalan ini mengandungi 12 soalan.
2. Jawab semua soalan **Bahagian A** dan **Bahagian B**.
3. Jawab soalan **No.10 Bahagian C.**
4. Pilih mana-mana satu soalan **No. 11** atau **No. 12, Bahagian C.**
5. Lihat arahan dan kehandak soalan dengsn teliti.

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

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

Section A
Bahagian A

[20 marks]
[20 markah]

Answer all questions in this section.
Jawab semua soalan dalam bahagian ini.

1 Diagram 1 shows an experiment to study the reaction of magnesium with dilute hydrochloric acid.
Rajah 1 menunjukkan satu eksperimen untuk mengkaji tindakbalas logam magnesium dengan asid hidroklorik cair

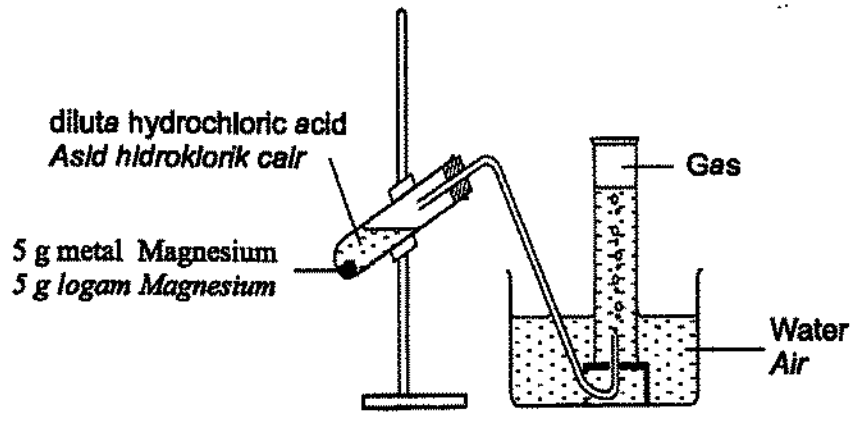


Diagram 1
Rajah 1

The volume of gas collected is recorded every minute for six minutes.
Table 1 shows the results of the experiment.
Isipadu gas yang dikumpul direkod setiap minit dalam masa enam minit.
Jadual 1 menunjukkan keputusan eksperimen.

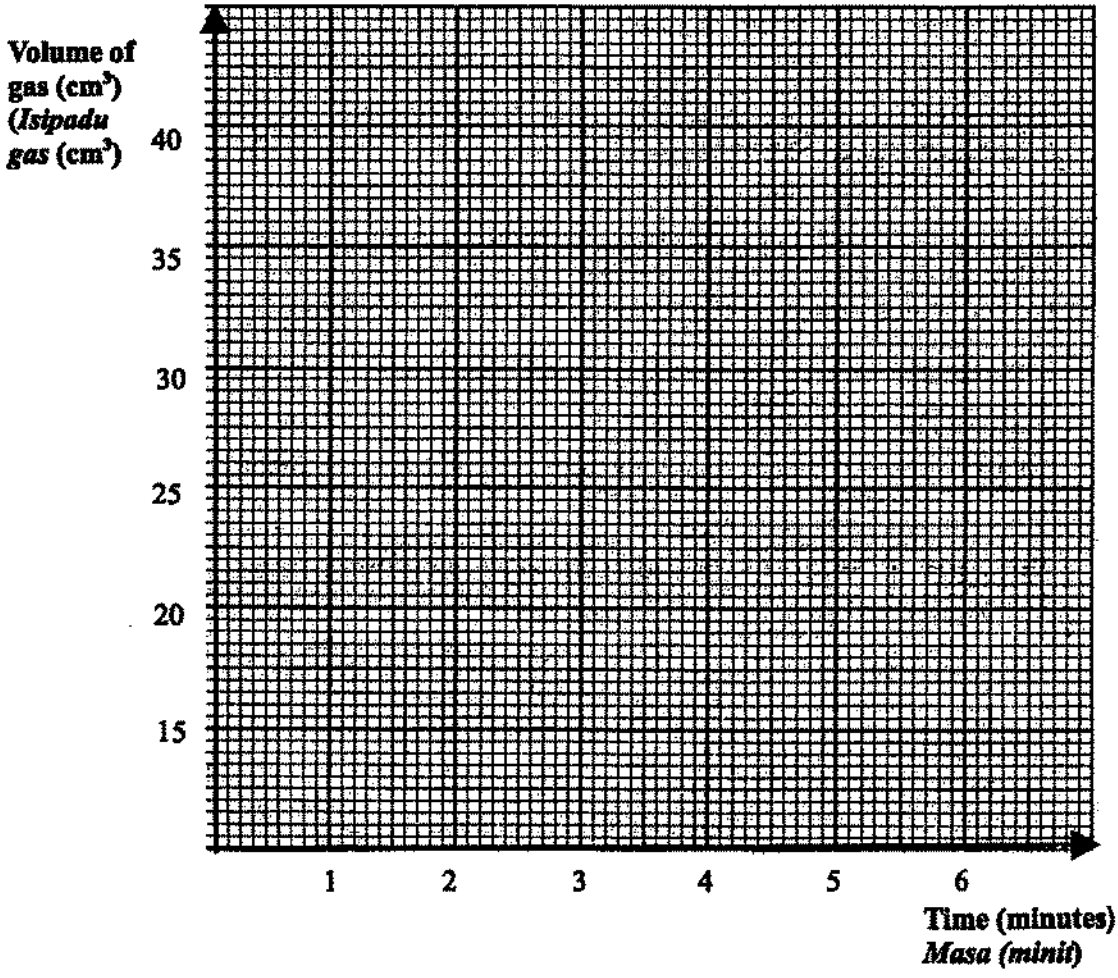
Time (minutes) *Masa (minit)*	1	2	3	4	5	6
Volume of gas collected (cm^3) *Isipadu gas (cm^3)*	20	30	37	41	43	43

Table 1
Jadual 1

(a) State the responding variable in this experiment.
Nyatakan pembolehubah yang bergerak balas dalam eksperimen ini.

.....

(b) Based on Table 1 draw a graph of the volume of gas against time.
Berdasarkan Jadual 1 lukiskan graf isipadu gas melawan masa.



[2 marks]

(c) What is the relationship between the volume of gas given off and the reaction time in the first two minutes?
Apakah hubungan antara isipadu gas yang terhasil dengan masa tindak balas bagi dua minit pertama?

.....

[1 mark]

(d) Predict the volume of gas collected at the seven minute.
Ramalkan isipadu gas yang dikumpul pada minit yang ketujuh.

.....

[1 mark]

2 Diagram 2 shows the errangement of the apperatus to compare the herdness of copper and brass. The diamster of ths dent in eech block is measured when the weight is released end the results are recorded.
Rajah 2 menunjukkan susunan radas bagi membandingkan eifat kekerasan kuprum dan loyang. Diameter lekukan yang terbentuk pada setiap bongkah diukur apabila pemberat dijatuhkan dan dicatatkan.

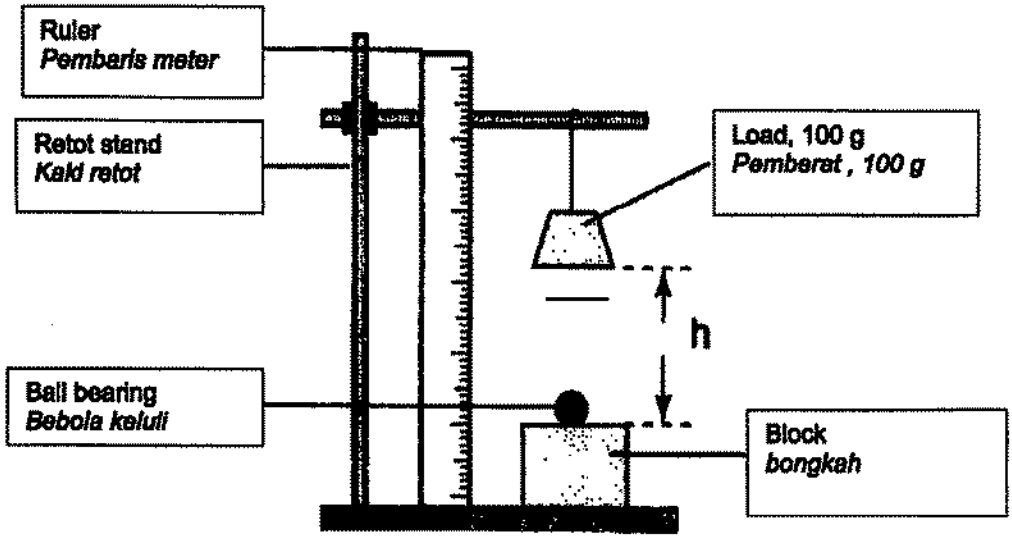


Diagram 2
Rajah 2

Ths result is recorded on Table 2.
Keputusan yang diperolehi dicatatkan dalam Jadual 2.

Block *Bongkah*	Diemeter lekuk / cm *The diameter of the dent/cm*		The everage of the dent/cm *Purata diameter lekuk / cm*
	Experiment 1 *Eksperimen 1*	Experiment 2 *Eksperimen 2*	
Copper *Kuprum*	2.0	2.2	2.1
Brass *Loyang*	0.4	0.6	.....

Table 2
Jadual 2

(e) Based on the experiment above, complete table 2.
Berdaserkan eksperimen di atas, lengkapkan Jadual 2. [1 mark]

(b) State the difference between the diameter of dent produce on the two blocks?
Nyatakan perbezaan diameter lekukan yang terhasil pada kedua-dua blok?

.....

[1 mark]

(c) State one hypothesis that can be made from this experiment.
Nyatakan satu hipotesis yang boleh dibuat daripada eksperimen ini.

.....

[1 mark]

(d) State the operational definition of brass.
Nyatakan definisi secara operasi bagi loyang.

.....

[1 mark]

(e) Predict the diameter of the dent of copper block if weight 200 g is used in this experiment.
Ramalkan diameter lekuk logam kuprum jika pemberat 200 g digunakan dalam eksperimen ini.

.....

[1 mark]

3 Three tins, **X, Y** and **Z** of equal size are hung separately from strings of the same length. Tin **X** is empty, tin **Y** is filled with cotton wool while tin **Z** is filled with sand. .
*Tiga tin, **X, Y** dan **Z** yang sama saiz digantung berasingan dari tali yang sama panjang. Tin **X** kosong, tin **Y** diisi dengan kapas manakala tin **Z** diisi dengan pasir.*

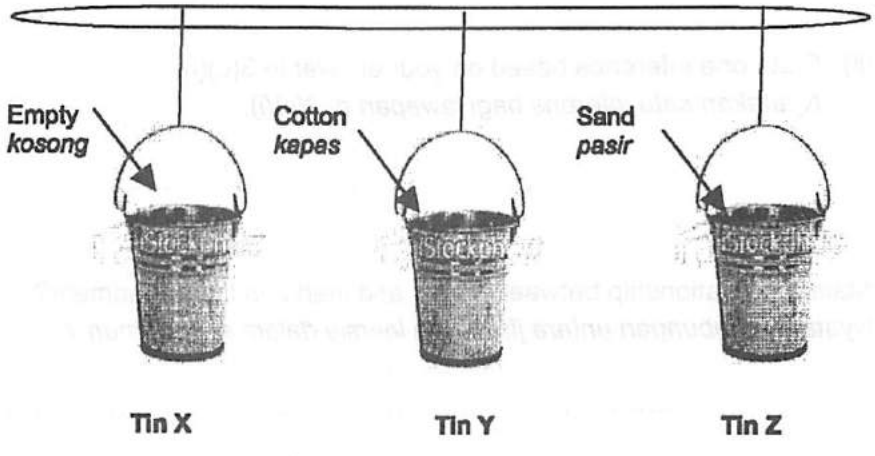


Diagram 3 / *Rajah 3*

The tin ere then ellowed to oscillata separately at the same force until they stop. The time taken for each tin to stop swinging is then recorded in Teble 3 below.
Tin-tin tersebut dieyun bebae dengan daya yang eame sehingga berhenti. Masa yang diambil untuk setiap tin itu berhenti direkod dalam Jedual 3 dibawah.

Tin	X	Y	Z
Oscillation time (second) *Masa berayun (saat*	T1	T2	T3

Teble 3 / *Jadual 3*

(a) Stata the constant variables in this experiment.
Nyatakan pembolehubah dimalarkan dalam eksperimen ini.

.....

[1mark]

(b) State one hypothesis that can be mede from this experiment.
Nyatekan satu hipotesis yang boleh dibuat daripade eksperimen ini.

.....

[1mark]

(c) (i) Arrange the tin X , Y and Z in descending ordar based on the time taken by eech tin to stop oscillated.
Susun tin X, Y den Z dalam turutan menurun berdasarkan mesa yang diambil untuk tin-tin itu berhenti berayun.

.....

[1mark]

(ii) State one inference based on your enswer in 3(c)(i).
Nyatakan satu inferens bagi jawapan di 3(c)(i).

.....

[1mark]

(d) State the reletionship between mass end inertia in tha experiment?
Nyatakan hubungan entara jisim dan inersie delem eksperiman ?

.....

[1mark]

4 Table 4 shows the characteristics of two types of plastics.
Jadual 4 menunjukkan ciri due jenis plastik.

Type of plastic *Jenis plastik*	Effect from heat *Kesan terhadap haba*
Plastic A *Plastik A*	Melt *Melebur*
Plastic B *Plastik B*	Does *not* melt *Tidak melebur*

Tebie 4
Jadual 4

(a) State the observation in this experiment.
Nyatakan pemerhatian bagi eksperimen ini.

.....

[1 merk]

(b) Based on table 4
Berdasarkan jadual 4
(I) which plestic can be moluded repeatedly ?
plastik manakah boleh diacu berulengkali ?

.....

[1 mark]

(II) State the inferens thet you can make.
Nyatakan inferens yang dapat anda buat.

.....

[1 mark]

(c) State the menipuleted variable in this experiment.
Nyatakan pembolehubah dimanipulasikan dalam eksperimen ini.

.....

[1 mark]

(d) Diagram 4 shows a few electrical appliances which are made of a type of plastic.
Rajah 4 menunjukkan beberapa alatan elektrik yang diperbuat daripada sejenis plastik.

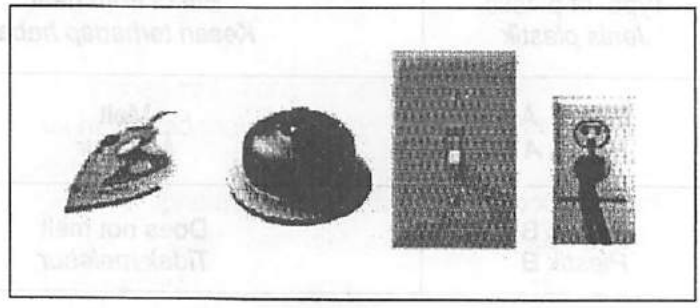


Diagram 4
Rajah 4

Based on the result given in table 4 predict the type plastic is can be use to make the electrical appliances in the diagram 4.
Berdasarkan keputusan dalam jadual 4 ramalkan jenis plastik yang boleh digunakan untuk membuat peralatan elektrik dalam rajah 4.

.....

[1 mark]

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

Answer all questions in this section.
Jawab semua soalan dalam bahagian ini.

5 Diagram 5 shows tha sex determination in human being.
Rajah 5 menunjukkan penentuan seks bagi manusia.

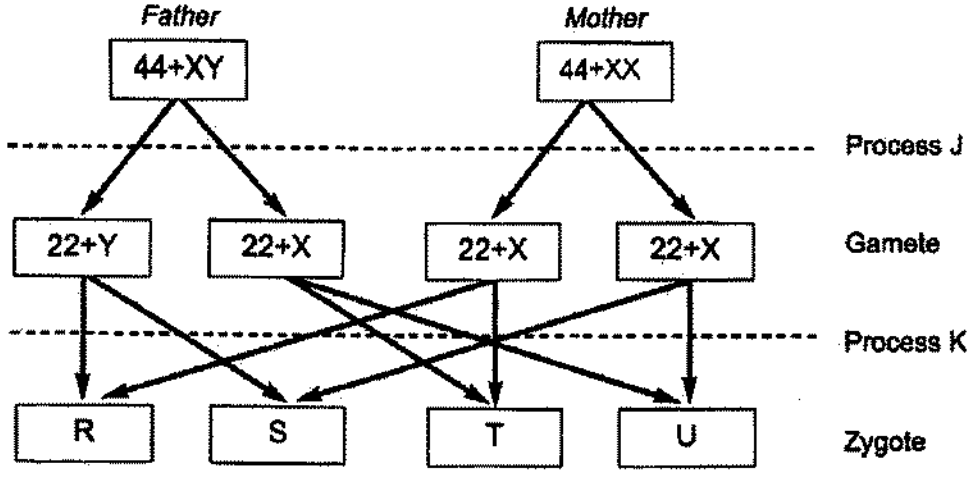


Diagram 5
Rajah 5

(a) Nama process J and process K.
Namakan prosea J dan proses K.

(i) Process J : .....
Proses J

(ii) Process K : .....
Proses K [2 marks]

(b) What is tha sax of the zygote R?
Apakah jantina bagi zigot R?

.....

[1 mark]

(c) How many chromosoma in zygote T.
Berapakah bilangan kromosom dalam zigot T.

.....

(d) (i) What type of twins will be produced, if the zygote R ie split into two ?
Apakeh jenis kembar yang terhasil jika zigot R terbahegi 2?

.....

(ii) State one characteristics for the type of twins in (d) (i)
Nyatekan satu ciri bagi jenis kembar dalem (d) (i)

.....

[2 marks]

6 Diagram 6 shows the penetrating power of two typee of *radioactive* rays.
Rajah 6 menunjukkan kuasa panembusan due jenis sinaran radioaktif.

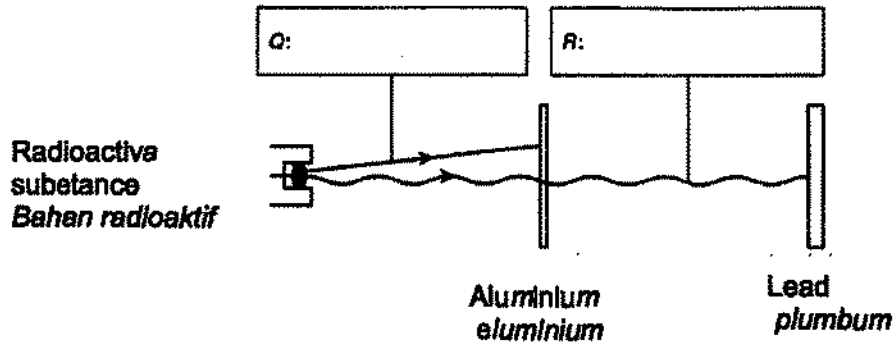


Diagram 6
Rajah 6

(e) Label the *radioactive* ray Q and R in the boxes provided in diagram 6.
Label sinaran radioaktif Q den R dalam kotak yang disediakan pada rajah 6.

[2 marks]

(b) (i) Which *ray* Q or R has e higher penetrative power?
Diantara sinar Q atau R yang mana mempunyai kuasa penembusan yang lebih tinggi?

.....

[1 mark]

(II) What is the best *method* to prevent radioactive ray *mentioned* in (b)(i) from being *amitted* to the environment.
Apakah kaedeh paling baik untuk menghalang sinaran yang dinyatakan di (b)(i) deripada terpancar ke persekitaran.

.....

[1 *mark*]

(c) Give one example of radioactive substance.
Nyatakan satu contoh bahan radioaktif.

.....

[1 mark]

(d) State one use of radioactive rays R in medical fields.
Nyatakan satu kegunaan sinaran radioaktif R dalam bidang perubatan.

.....

[1 mark]

7 Diagram 7 shows a part of a nitrogen cycle.
Rajah 7 menunjukkan sebahagian daripada kitar nitrogen.

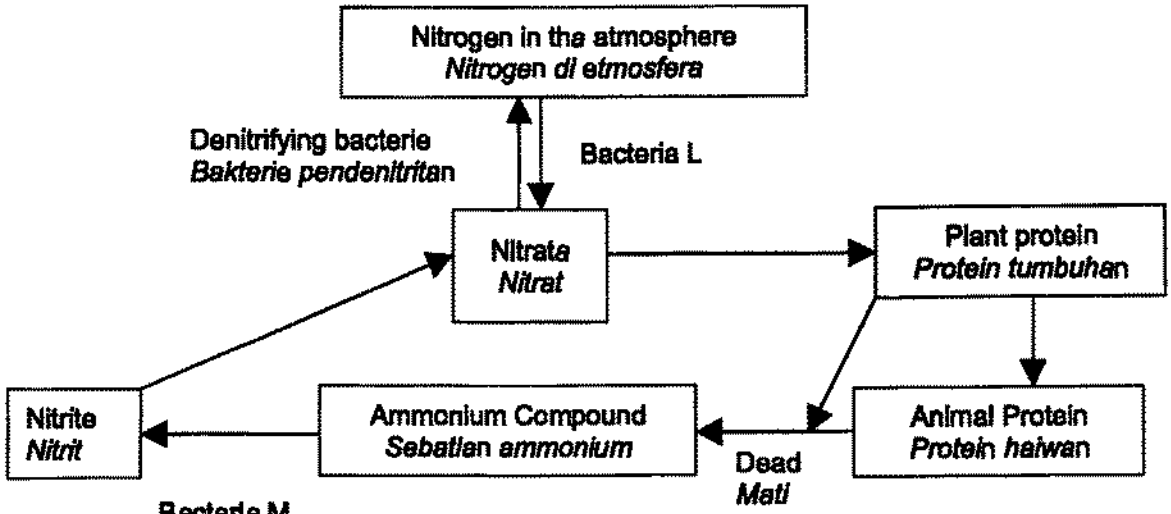


Diagram 7
Rajah 7

(a) Name bacteria L and M.
Namakan bakteria L dan M.

L : .....

M : .....

[2 marks]

(b) State the condition of nitrate that can be absorbed by plants.
Nyatakan keadaan nitrat yang boleh diserap oleh tumbuhan.

.....

[1 mark]

(c) Give one importance of tha nitrogan cycla.
Berikan satu kepentingan kitar nitrogen.

.....

[1 mark]

(d) Nama ona plant that its root has bacteria L.
Namakan satu tumbuhan yang akarnya terdapat bakteria L.

.....

[1 mark]

(a) Based on Diagram 7, how ia plant protein is converted into animal protein?
Berdasarkan Rajah 7, bagaimanakah protein tumbuhan ditukarkan kepada protein haiwan?

.....

[1 mark]

8 Tha following information is tha list of foods need to be processed.
Berikut adalah senarai makanan yang perlu diproses.

banana chip karapek pisang	Carrot *lobak*
Coffee powdar *serbuk kopi*	Fresh milk *susu segar*
Fruit juices *jua buahan*	Potatoes *kantang*

Diagram 8
Rajah 8

a) State one aim of food processing.
Nyatakan satu tujuan makanan diproses.

.....

[1 mark]

b) Classify the foods in tha Diagram 8 according to thair processing methods in tha tabla below.
Kelaskan makanan dalam Rajah 8 bardasarkan kepada keadah pemprosesannya dalam jadual dibawah.

Irradiation *sinaran*	Pasteurisation *pempasteuran*	Vacuum Packaging *Pembungkusan vakum*

[3 marks]

c) (i) If Aminah wishes to kaap tha prawn that aha bought for a month, suggest tha best method to preserve tha prawn.
Jika Aminah bercadang untuk menyimpan udang yang dibelinya untuk tempoh sebulan . Cadangkan cara terbaik untuk menyimpan udang tersebut.

.....

[1 mark]

(ii) Explain your answer.
Jelaskan jawapan anda.

.....

[1 mark]

9 Diagram 9 shows communication through satellite.
Rajah 9 menunjukkan komunikasi melalui satelit.

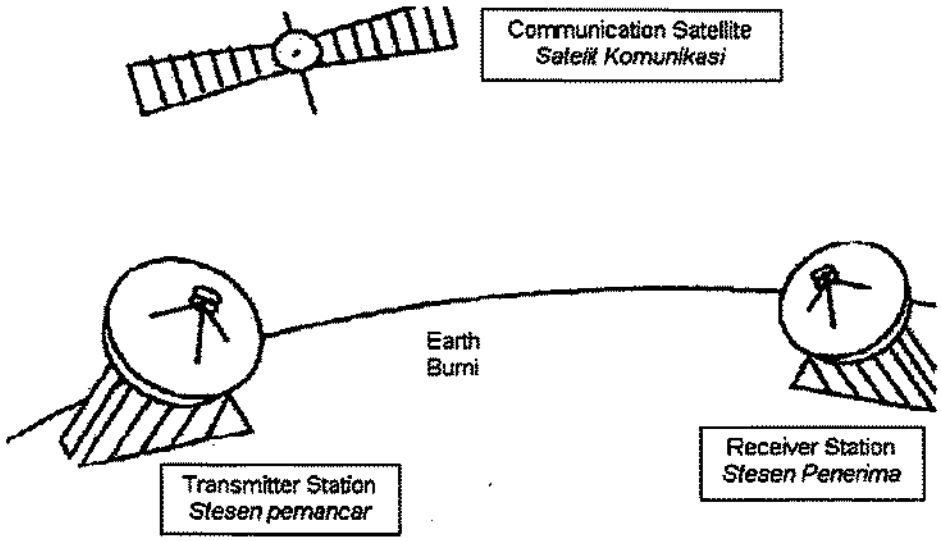


Diagram 9
Rajah 9

(a) Draw an arrow to show the direction of micro wave in the communication system through satellite in the Diagram 9.
Lukiskan anak panah untuk menunjukkan arah perjalanan gelombang mikro di dalam komunikasi melalui satelit pada Rajah 9.

[1 mark]

(b) State two advantages using micro wave for communications.
Nyatakan dua kebaikan menggunakan gelombang mikro untuk komunikasi.

i.....

ii.....

[2 marks]

c) State the reason why communication satellite called a geostatic satellite.
Mengapakah satelit komunikasi dikatakan geopegun atau satelit segerak.

.....

[1 mark]

d) State two satellite uses excluding for communication.
Nyatakan dua kegunaan satelit selain daripada untuk komunikasi.

i.....

ii.....

[2 marks]

Bahagian C
Bahagian C

Answer **Question 10** and either **question 11** or **question 12.**
Jawab soalan 10** dan mana-mana satu daripada **soalan 11** atau **soalan 12.

10 Study the following statement,
Kaji pernyataan berikut,

> Ethanoic acid and Ammonium solution hava different effects when added to letex.
>
> *Asid atanoic dan larutan ammonium mamberi kesan berbeza apabila ditambahkan kepada lateka*

Your are given ,
Anda diberi

Ethanoic ecid, ammonium solution, two beakar , two glass rod and other materials.
Asid etanoik, larutan ammonia, dua bikar, dua rod kaca dan bahan lain.

(a) Suggest a hypothesis to investigate ths ebove statemant.
Nyatakan satu hipotesis untuk menyiasat pernyataan di atas

[1 mark]

(b) Dascribe an experimant to test your hypothesis based on the following criteria:
Huraikan satu eksperimen untuk menguji hipotesis anda berdasarkan kepada perkara-perkara berikut

(I) Aim of the experimant.
Tujuan aksperiman [1 mark]

(II) Identification of variebles
Mengenalpasti semue pemboleh ubah [2 marks]

(III) List of epparatus and msterisls
Senaral radas dan bahen [1 mark]

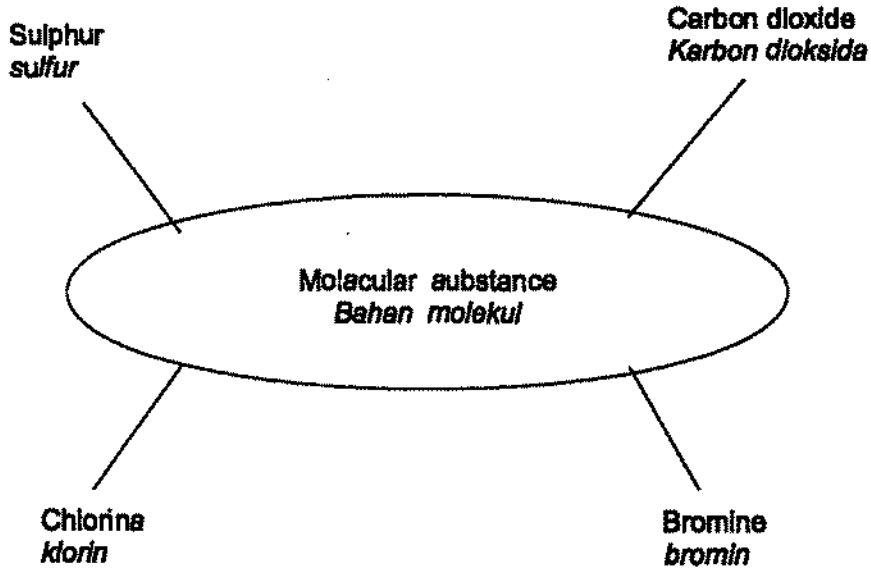
(iv) Procedure
Kaedah / prosedur [4 merks]

(v) Tabuletion of data
Penjadualan data [1 merk]

11 (e) Describe the differences between properties of atomic substance and ionic substance.
Huraikan perbezaan di antara bahan atom dan bahan molekul

[4 marks]

(b) Diagram 11 shows four examples of molecular substances.
Rajah 11 menunjukkan empat contoh bahan molekul.



Study the above examples of molecular substace.You are required to develop a concept of *a* molacular substance
Kaji contoh bahan molekul di atas.Anda dikehendaki membina satu konsep tentang bahan molekul.

Your answer should be based on the following aspacts:
Jawapan anda handaklah berdasarkan aspek berikut

- Identify two common characteristics of molecular substance.
Kenalpasti dua ciri sepunya bahan molekul

- Develop an initial concept of *a* molecular aubstance
Bina konsep awal bahan molekul

- Give **one** example of molecular substance end **one** which not molecular substance
Beri satu contoh bahan molekul dan satu contoh bukan bahan molekul

- Stata the actual concept of *a* molecular substance
Nyatakan konsep sebenar bahan molekul

[6 marks]

12 (a) State four differences between the characteristics of the image in a plane mirror and that on a photographic film.
Nyatakan empat perbezaan ciri-ciri imej bagi cermin satah dengan filem fotografi.

[4 marks]

(b) Hanneh wishes to see the giraffes on the other side of a high wall. She does not want to climb a ladder to look over the wall. Explain how can she uses a mirrors to make an instrument to help her see over the wall.
Your explanation should include the following:

Henneh ingin melihat zirafah disebelik tembok yang tinggi.Dia tidak mahu memanjat tembok itu untuk melihatnya.Terangkan bagaimana dia membuat alat dengan menggunakan cermin untuk membolehkannya untuk melihat zirafah di sebalik tembok itu.
Penerangan anda hendaklah mengandungi aspek-aspek berikut:

- Problem statament.
  Pernyataan masaleh.

- Name of method used.
  Nama kaedah yang digunakan.

- Steps of the method used.
  Langkah-langkah kaedah.

[6 marks]

END OF QUESTION PAPER.
KERTAS SOALAN TAMAT.

SCIENCE FORM 5

TRIAL EXAM 2011

MARKING SCHEME

PAPER 1

NO SOALAN	JAWAPAN	NO SOALAN	JAWAPAN
1	**B**	26	**C**
2	**D**	27	**B**
3	**B**	28	**D**
4	**D**	29	**D**
5	**A**	30	**A**
6	**D**	31	**D**
7	**D**	32	**B**
8	**A**	33	**A**
9	**B**	34	**A**
10	**A**	35	**A**
11	**B**	36	**C**
12	**C**	37	**C**
13	**C**	38	**C**
14	**D**	39	**B**
15	**A**	40	**C**
16	**C**	41	**D**
17	**D**	42	**C**
18	**C**	43	**C**
19	**C**	44	**B**
20	**B**	45	**A**
21	**C**	46	**A**
22	**A**	47	**B**
23	**B**	48	**B**
24	**D**	49	**D**
25	**A**	50	**A**

MARKING SCHEME
TRIAL EXAM 2011
SCIENCE FORM 5
PAPER 2

		Section A Bahagian A	
Question		**Answer**	**Mark**
1	a	The volume of gas (collected)	**1**
	b	4-5 points are transferred correctly	**1**
		Smooth graph	**1**
	c	The volume of gas given off is directly proportional to the reaction time/ When the time increases the volume of gas increases	**1**
	d	$43cm^3$	**1**
		TOTAL	**5**
2	a	0.5 cm	**1**
	b	Diameter of the dent in copper is more than in brass/ Diameter of the dent in brass is less than in copper	**1**
	c	Brass is more harder than copper/ Copper is more soft than brass/ alloy is more harder than metal	**1**
	d	brass is a substance that produced the less dent	**1**
	e	more than 2.1// any answer more than 2.1	**1**
		TOTAL	**5**
3	a	The length of the string/ Value of the force	**1**
	b	When the mass of the tin increase the oscillation time increases	**1**
	c i	Z,Y,X	**1**
	ii	Tin Z takes the longest time to oscillate because it has the biggest mass/ vise versa	**1**
	d	The bigger the mass the bigger the inertia	**1**
		TOTAL	**5**

Question		Answer	Mark
4	a	Plastic A melt while plastic B did not melt when heated	1
	b	i Plastic A	1
		ii Plastic A can be moulded repeatedly because it melt when heated	1
	c	type of plastic	1
	d	Plastic B	1
		TOTAL	5

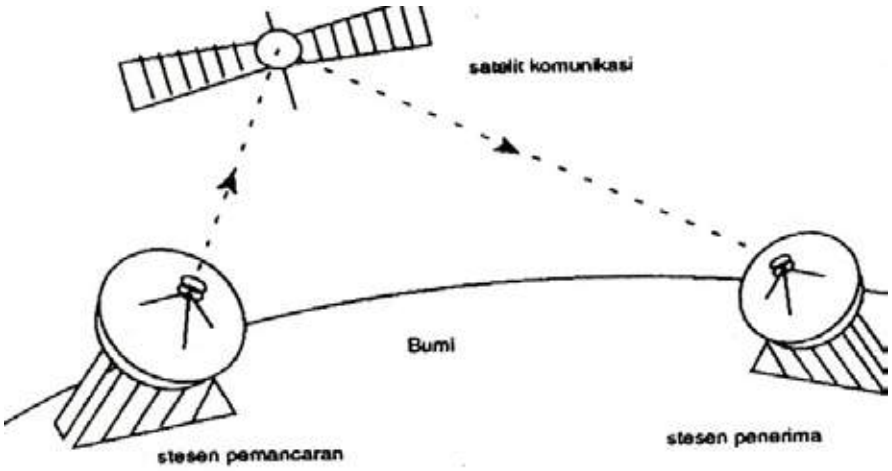
	Section B Bahagian B	
Question	**Answer**	**Mark**
5 a	J Meiosis	1
	K fertilization	1
b	male	1
c	46	1
d	i identical twin	1
	ii same sex/ same genetic/same face	1
	TOTAL	6
6 a	Q: Beta	1
	R: Gama	1
b	(i) R	1
	(ii)Keep in lead container	1
c	Cobalt-60, carbon-14,	1
d	Gamma ray used to sterilise medical apparatus.	1
	TOTAL	6

<table>
<tr><th>Question</th><th>Answer</th><th>Mark</th></tr>
<tr><td>7 a</td><td>L : Nitrogen fixing bacteria</td><td>1</td></tr>
<tr><td></td><td>M : Nitrifying bacteria</td><td>1</td></tr>
<tr><td>b</td><td>Ion / Solution</td><td>1</td></tr>
<tr><td>c</td><td>maintain the nitrogen content in nature //
ensure the soils fertility</td><td>1</td></tr>
<tr><td>d</td><td>Groundnuts / Soy/ Alfalfa</td><td>1</td></tr>
<tr><td>e</td><td>By eating/ nutrition</td><td>1</td></tr>
<tr><td></td><td>TOTAL</td><td>6</td></tr>
<tr><td>8 a</td><td>Delays food from getting spoilt / maintains freshness of food</td><td>1</td></tr>
<tr><td>b</td><td><table><tr><th>Irradiation
sinaran</th><th>Pasteurisation
pempasteuran</th><th>Vacuum Packaging
Pembungkusan vakum</th></tr><tr><td>Carrot
Lobak

Potatoes
kentang</td><td>Fresh milk
susu segar

Fruit juices
jus buahan</td><td>banana chip
kerepek pisang

coffee powder
serbuk nescafe</td></tr></table></td><td>3</td></tr>
<tr><td>c</td><td>i freezing</td><td>1</td></tr>
<tr><td></td><td>ii Because it does not destroy the taste and colour of food</td><td>1</td></tr>
<tr><td></td><td>TOTAL</td><td>6</td></tr>
</table>

Question	Answer	Mark
9 a		**1**
b	not affected by change in weather as fast as the speed of light not affected by obstacles such as oceans and mountains a lot of information can be sent at any one time can cover wider areas does not need transmission medium as microwaves can move through vacuum Any 2	**2**
c	These types of satellites orbit the earth according to the normal period of the earth's circulation	**1**
d	Weather forecast Navigational Military earth surveyor Any 2	**2**
	TOTAL	**6**

	Section C Bahagian C	
Question	**Answer**	**Mark**
10 a	Hypothesis : Addition of acid ethanoic (acid) can coagulate the latex // Addition of ammonium (Alkali) prevent the latex from coagulating	**1**
b	Aim of the experiment : To study the effect of acid(acid ethanoic) and alkali (ammonium solution) on latex.	**1**
	Identification of variables Constant variable : The volume of latex/acid/alkali//concentration of acid/alkali Manipulated variable :Type of chemical added// Acid and Alkali Responding variable : The condition of latex//Thecoagulation of latex Any 2	**2**
	(iii) List of apparatus and materials : Two Beaker , two Glass rod,,Ethanoic acid , Ammonium solution and **Latex**	**1**
	(iv) Procedure i Pour 20 cm^3 latex into beakers labelled A and B. //Diagrm ii Add a few drops of ethanoic acid into beaker A // Diagram iii.Stir the solution for a few minute iv Observe and record the condition of latex *v* Repeat stage (ii) to (iv) using ammonium solution//Diagram	**4**
	(v) Tabulation of data Type of chemical added / The condition of latex/The coagulation of latex Latex + Ethanoic acid Latex + Ammonium solution	**1**
	TOTAL	**10**

<table>
<tr><th>Question</th><th>Answer</th><th>Mark</th></tr>
<tr><td>11 a</td><td>
<table>
<tr><td>Atomic substance</td><td>Molecular substance</td></tr>
<tr><td>Consist of atoms</td><td>Consist of molecules</td></tr>
<tr><td>High melting point</td><td>Low melting point</td></tr>
<tr><td>Conduct electricity under solid and molten condition</td><td>Cannot conduct electricity</td></tr>
<tr><td>Force of attraction between particles very strong</td><td>Force of attraction between particles weak</td></tr>
</table>
</td><td>4</td></tr>
<tr><td>b</td><td>Two common characteristics:
Low melting point
Cannot conduct electricity

Initial concept:
Low melting point and cannot conduct electricity is a molecular substance

Another example : oxygen/iodine / naphthalene
Non-example : copper/ iron/ sodium

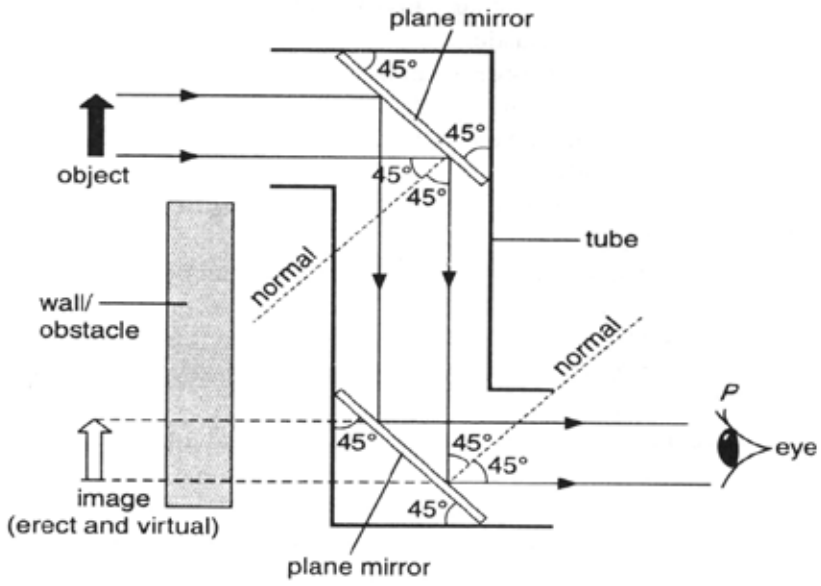
Actual concept:
molecular substance is a substance that has low melting point and cannot conduct electricity</td><td>2

1

1
1

1</td></tr>
<tr><td></td><td>TOTAL</td><td>10</td></tr>
<tr><td>12 a</td><td>Differences between the characteristics of the images formed in a plane mirror and on photographic film:
<table>
<tr><th>Characteristics of the image formed in a plane mirror</th><th>Characteristics of the image formed on a photographic film</th></tr>
<tr><td>Virtual</td><td>Real</td></tr>
<tr><td>Upright</td><td>Inverted</td></tr>
<tr><td>Same size as the object</td><td>Smaller than the object</td></tr>
<tr><td>Laterally inverted</td><td>Not laterally inverted</td></tr>
</table>
</td><td>4</td></tr>
<tr><td>b</td><td><u>Problem statement</u>

Hannah wishes to see the giraffes on the other side of a high wall but does not want to climb a ladder and look over the wall.</td><td>1</td></tr>
</table>

Question	Answer	Mark
	Name of method used Hannah needs to use mirrors to make a periscope to help her see over the wall. *Steps of the method used* 1. Hannah needs to make /find a long tube and buy two plane mirrors. 2. A hole is made at each end of the tube as shown in the figure below. 3. At each end of the tube, a plane mirror is placed parallel to each other at an angle of 45 ^{o} in the direction of view as shown in the figure below. 4. Light rays from an object are reflected twice before entering the eye as shown in the figure below. 5. Hannah can now view the giraffes by looking into the periscope at the end labelled P. Any 4 OR  [4 marks]	1 4
	TOTAL	10

END

TAMAT