

1511/1
Science
Paper 1
Ogos
2010
1 ½ hours

**PEPERIKSAAN PERCUBAAN
SIJIL PELAJARAN MALAYSIA
NEGERI PERAK
2010**

SCIENCE

PAPER 1

Satu jam lima belas minit

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU

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

Kertas ini mengandungi 20 halaman bercetak.

- 1 Diagram 1 shows a simplified nitrogen cycle chart.
Rajah 1 menunjukkan suatu kitar nitrogen.

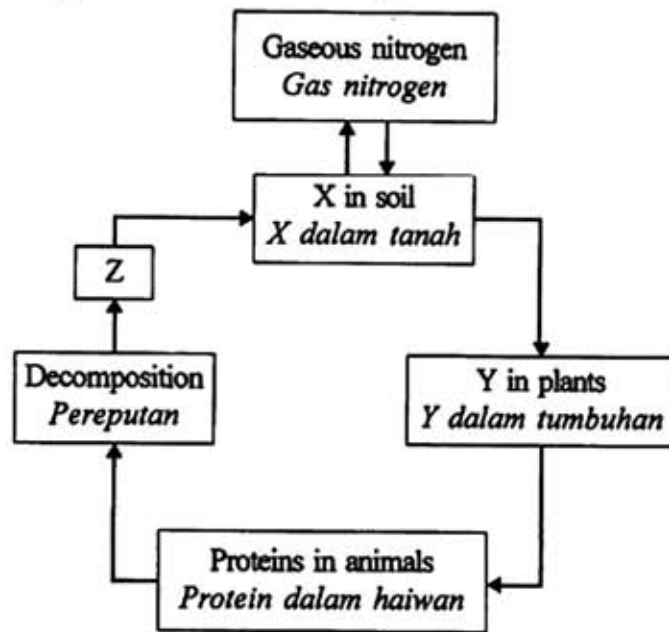


Diagram 1
Rajah 1

What are represented by X, Y and Z?
Apakah yang diwakili oleh X, Y dan Z?

	X	Y	Z
A	Ammonia <i>Ammonia</i>	Proteins <i>Protein</i>	Nitrates <i>Nitrat</i>
B	Nitrates <i>Nitrat</i>	Proteins <i>Protein</i>	Ammonium compounds <i>Sebatian Ammonia</i>
C	Nitrates <i>Nitrat</i>	Ammonia <i>Ammonia</i>	Nitrites <i>Nitrit</i>
D	Nitrites <i>Nitrit</i>	Nitrates <i>Nitrat</i>	Nitrogen <i>Nitrogen</i>

- 2 Which one is not a part of a neuron?
Manakah antara berikut bukan bahagian neuron?

- A Dendrite
- B Cell body
- C Axon
- D Gray matter

- 3 Diagram 2 shows a human brain.
Rajah 2 menunjukkan otak manusia.

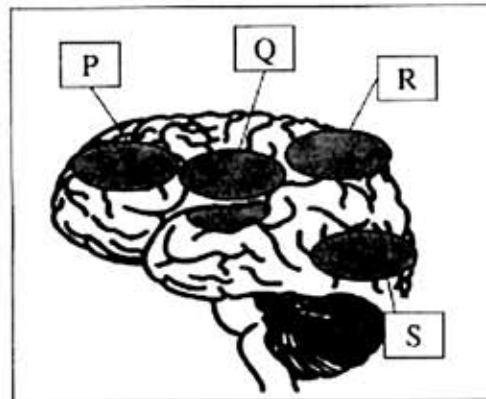
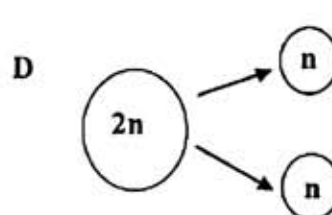
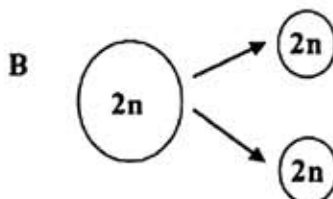
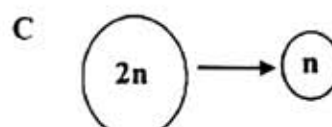
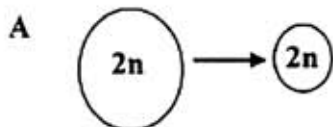


Diagram 2
Rajah 2

Which part will be the cause of deafness if injured?

Bahagian manakah yang menyebabkan kecacatan pendengaran jika tercedera?

- A P
B Q
C R
D S
- 4 The number of chromosomes in a human cell is
Bilangan kromosom dalam sel manusia ialah
- A $22 + X$
B $22 + Y$
C 46
D 23
- 5 The number of autosomes and type of sex chromosome normally present in female gamete (ovum) is
Bilangan autosom dan jenis kromosom seks yang hadir dalam gamet perempuan (ovum) ialah
- A $44 + XY$
B $44 + XX$
C $22 + Y$
D $22 + X$
- 6 Which diagram most correctly represents the process of mitosis?
Rajah manakah paling benar mewakili proses mitosis?



- 7 Diagram 3 shows a food chain.
Rajah 3 menunjukkan suatu rantai makanan.

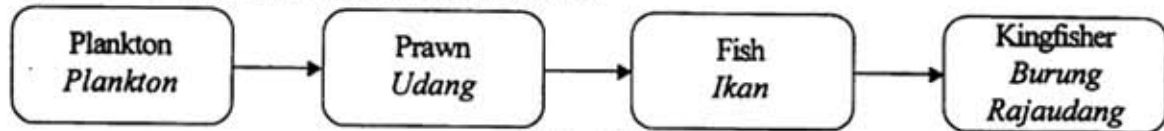


Diagram 3
Rajah 3

The fish in the food chain is known as
Ikan dalam rantai makanan dikenali sebagai

- | | |
|---------------------------------------|---|
| A Producer
Pengeluar | C Secondary consumer
Pengguna sekunder |
| B Primary consumer
Pengguna primer | D Tertiary consumer
Pengguna tertiar |
- 8 Dew collects on a spider web in the early morning. This is an example of
Air embun terkumpul pada jaring lelabah diwaktu awal pagi. Ini adalah contoh
- | | |
|------------------------------|-------------------------------|
| A condensation
kondensasi | C sublimation
pemejalwapan |
| B evaporation
penyejatan | D melting
peleburan |

- 9 Diagram 4 shows a symbol in Periodic Table.
Rajah 4 menunjukkan simbol pada Jadual Berkala.

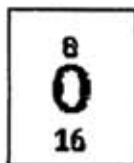


Diagram 4
Rajah 4

The number 16 stands for?
Nombor 16 merujuk kepada?

- | | |
|----------------------------------|---|
| A Proton number
Nombor proton | C Number of electron
Bilangan elektron |
| B Atomic mass
Jisim atom | D Number of neutron
Bilangan neutron |
- 10 A student watches an ice cube melts into a beaker of water. Has a chemical changes taken place?
Seorang pelajar memerhatikan kiub ais mencair didalam bikar berisi air. Adakah perubahan kimia berlaku?
- | |
|---|
| A Yes, a gas has been given off
Ya, gas dihasilkan |
| B Yes, the colour of the water has changed
Ya, warna air berubah |
| C No, water does not react chemically
Tidak, air tidak bertindak balas secara kimia |
| D No, because no new substances have formed
Tidak, kerana tiada pembentukan bahan baru |

- 11 Diagram 5 shows the electrolysis of copper chloride solution.
Rajah 5 menunjukkan elektrolisis bagi larutan kuprum klorida.

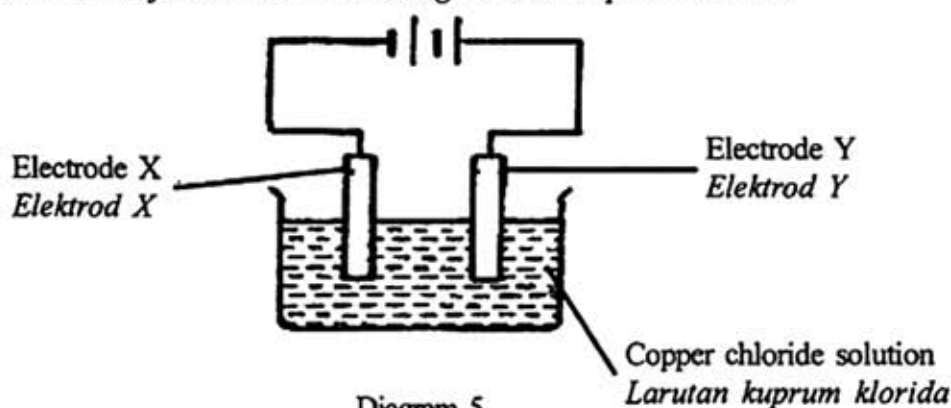


Diagram 5
Rajah 5

What are the products formed at electrode X and electrode Y?
Apakah bahan yang dihasilkan pada elektrod X dan elektrod Y?

	Electrode X <i>Elektrod X</i>	Electrode Y <i>Elektrod Y</i>
A	Hydrogen <i>Hidrogen</i>	Chlorine <i>Klorin</i>
B	Copper <i>Kuprum</i>	Chlorine <i>Klorin</i>
C	Chlorine <i>Klorin</i>	Hydrogen <i>Hidrogen</i>
D	Chlorine <i>Klorin</i>	Copper <i>Kuprum</i>

- 12 Table 1 below shows the result obtained when a thermometer is placed in a mixture of material X and water.
Jadual 1 di bawah menunjukkan keputusan yang diperolehi apabila termometer diletakkan di dalam campuran bahan X dan air.

Thermometer reading <i>Bacaan termometer</i>	Temperature ($^{\circ}$ C) <i>Suhu ($^{\circ}$ C)</i>
Initial reading <i>Bacaan awal</i>	30
Final reading <i>Bacaan akhir</i>	22

Table 1
Jadual 1

What is material X?
Apakah bahan X?

- | | |
|---|---|
| A Concentrated sulphuric acid
<i>Asid sulfurik pekat</i> | C Ammonium nitrate
<i>Ammonium nitrat</i> |
| B Copper sulphate
<i>Kuprum sulfat</i> | D Sodium hydroxide
<i>Natrium hidroksida</i> |

- 13 The graph in the Diagram 6 shows the cooling of the liquid naphthalene in relation to time.
 Graf di dalam Rajah 6 menunjukkan kadar penyejukan cecair naftalena berbanding masa.

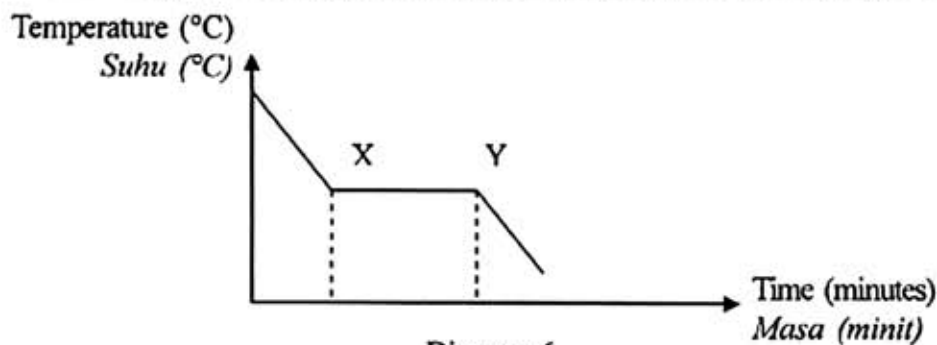


Diagram 6
Rajah 6

What happens during the period of time from X to Y?
 Apakah yang berlaku semasa tempoh antara X dan Y?

- A Heat is absorbed from the surroundings.
 Haba diserap dari persekitaran.
- B The temperature increase dramatically.
 Suhu naik secara mendadak.
- C The movement of particle slows down.
 Pergerakan zarah menjadi perlahan.
- D The particle separate further.
 Zarah terpisah jauh.
- 14 Diagram 7 shows a change in the state of matter.
 Rajah 7 menunjukkan perubahan dalam keadaan suatu bahan.



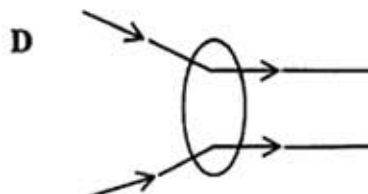
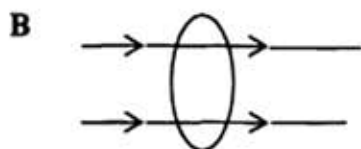
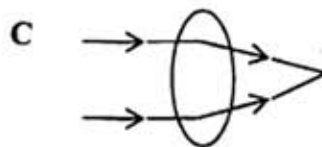
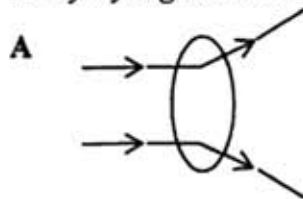
Diagram 7
Rajah 7

Which of the following happens in the change above?
 Antara yang berikut yang manakah menunjukkan perubahan di atas?

- I The particles absorb energy.
 Zarah menyerap tenaga.
- II The force of attraction between the particles is weakened.
 Daya tarikan antara zarah menjadi lemah.
- III The particles are released into the air.
 Zarah dibebaskan ke udara.
- A III only.
 III sahaja.
- B I and II only.
 I dan II sahaja.
- C I and III only.
 I dan III sahaja.
- D II and III only.
 II dan III sahaja.

- 15 Which of the following diagrams A, B, C or D correctly shows the light rays passing through a convex lens?

Antara rajah A, B, C atau D yang berikut, yang manakah yang betul menunjukkan sinar cahaya yang melalui kanta cembung?



- 16 The secondary colours for coloured lights are
Warna-warna sekunder bagi cahaya berwarna ialah

- A white, yellow, magenta
putih, kuning, magenta
- B blue, green, red
biru, hijau, merah
- C orange, green, violet
jingga, hijau, ungu
- D yellow, cyan, magenta
kuning, sian, magenta

- 17 What is the main use of nuclear energy?
Apakah kegunaan utama tenaga nuklear?

- A To control insect pests.
Untuk mengawal serangga perosak.
- B To kill microorganisms.
Untuk membunuh mikroorganisma.
- C To kill cancerous cells.
Untuk membunuh sel kanser.
- D To generate electricity.
Untuk menjana tenaga elektrik.

- 18 Which of the following particles is used to bombard uranium-235 in a nuclear fission reaction?
Zarah yang manakah yang digunakan untuk membedil uranium-235 dalam tindakbalas pembelahan nukleus?
- A Proton
Proton
- B Neutron
Neutron
- C Electron
Elektron
- D Alpha
Alfa
- 19 Which mixture of pigments will produce black colour?
Campuran pigmen yang manakah akan menghasilkan warna hitam?
- A Red and blue
Merah dan biru
- B Red and green
Merah dan hijau
- C Blue and yellow
Biru dan kuning
- D Yellow and magenta
Kuning dan magenta
- 20 Diagram 8 shows the production of colours X, Y and Z from the addition of coloured lights.
Rajah 8 menunjukkan hasil warna X, Y dan Z dari penambahan cahaya berwarna.

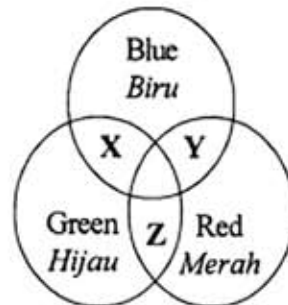


Diagram 8
Rajah 8

What colours are represented by X, Y and Z?

Apakah warna yang diwakili oleh X, Y dan Z?

	X	Y	Z
A	Cyan Sian	Magenta Magenta	Yellow Kuning
B	Yellow Kuning	Magenta Magenta	Cyan Sian
C	Magenta Magenta	Cyan Sian	Yellow Kuning
D	Cyan Sian	Yellow Kuning	Magenta Magenta

- 21 Which of the following is an alloy?
Antara berikut, yang manakah aloi?

- | | |
|-------------------|--------------------|
| A Gold
Emas | C Pewter
Piuter |
| B Silver
Perak | D Copper
Kuprum |

- 22 The information below shows the industrial products made from substance Q.
Maklumat berikut menunjukkan hasil industri yang diperbuat daripada bahan Q.

- | |
|--|
| <ul style="list-style-type: none"> • Nitric acid
Asid nitrik • Cleaning agent
Agen pencuci • Explosives
Bahan letupan |
|--|

What is Q?
Apakah Q?

- | | |
|----------------------|-----------------------------------|
| A Ethanol
Etanol | C Sulphur
Sulfur |
| B Ammonia
Ammonia | D Sulphuric acid
Asid sulfurik |

- 23 Diagram 9 shows a type of microorganism which grows on the surface of bread.
What group of microorganism is this?
Rajah 9 menunjukkan sejenis mikroorganisma yang tumbuh pada permukaan roti.
Apakah kumpulan mikroorganisma ini?

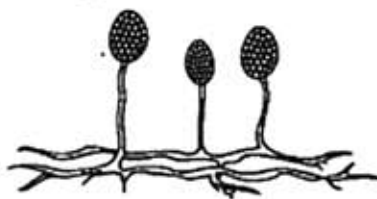
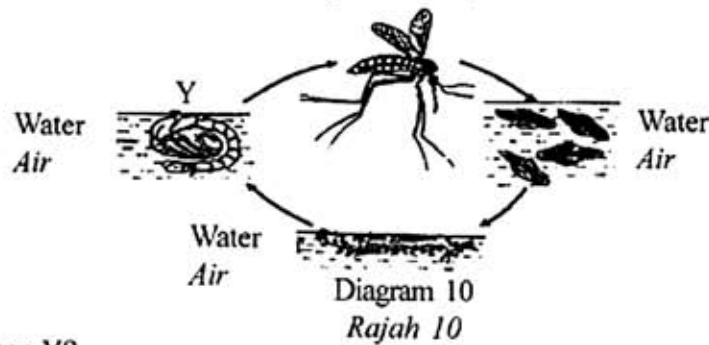


Diagram 9
Rajah 9

- | | |
|------------------------|------------------|
| A Bacteria
Bakteria | C Algae
Alga |
| B Virus
Virus | D Fungi
Kulat |
- 24 Which disease is caused by virus?
Penyakit yang manakah yang disebabkan oleh virus?
- | | |
|----------------------|--------------------------------|
| A Dengue
Denggi | C Ringworm
Kurap |
| B Malaria
Malaria | D Tuberculosis
Batuk kering |

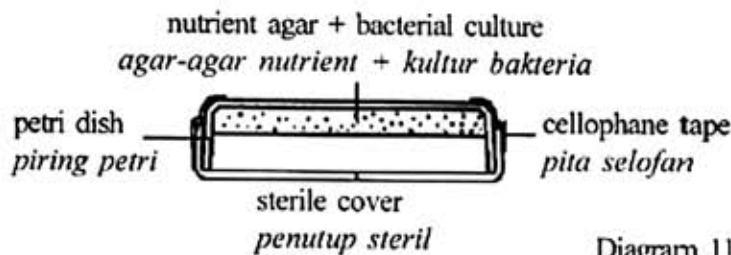
- 25 Diagram 10 shows the life cycle of a mosquito.
Rajah 10 menunjukkan kitar hidup seekor nyamuk.



Name stage Y?

Namakan peringkat Y?

- | | | | |
|---|--------------|---|----------------|
| A | Egg
Telur | C | Larva
Larva |
| B | Pupa
Pupa | D | Imago
Imago |
- 26 Which is the best method to sterilise feeding bottle?
Kaedah manakah yang terbaik untuk mensteril botol susu?
- A Wash using antiseptic
Basuh menggunakan antiseptik
- B Wash using disinfectant
Basuh menggunakan disinfektan
- C Immerse in boiling water
Rendam dalam air mendidih
- D Expose to ultraviolet rays
Dedah kepada sinaran ultraungu
- 27 Diagram 11 shows an apparatus set-up to study the growth of microorganisms.
Rajah 11 menunjukkan susunan radas untuk mengkaji pertumbuhan mikroorganisma.



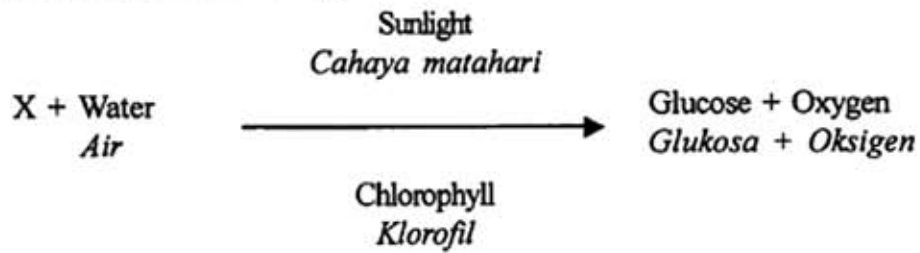
These petri dishes are kept in a cupboard and under the sun respectively.

What is the factor investigated in this experiment?

Piring-piring petri ini masing-masing diletakkan di dalam almari dan di bawah sinaran matahari. Apakah faktor yang dikaji dalam eksperimen ini?

- | | | | |
|---|------------------------|---|---------------------|
| A | Light
Cahaya | C | Temperature
Suhu |
| B | Humidity
Kelembapan | D | pH
pH |

- 28 The following word equation shows a chemical reaction in a plant.
Persamaan perkataan berikut menunjukkan suatu tindak balas kimia dalam tumbuhan.



What is X?
Apakah X?

- A Oxygen
 B Nitrogen
 C Hydrogen
 D Carbon dioxide
- 29 The following shows the symptoms of a disease due to lack of nutrient X.
Berikut adalah simptom-simptom suatu penyakit disebabkan oleh kekurangan nutrient X.

- * Swelling and bleeding gums
Gusi bengkak dan berdarah
- * Teeth loosens
Gigi goyang
- * Muscular pain
Sakit otot

What is nutrient X?
Apakah nutrient X?

- A Vitamni B
 B Vitamin C
 C Vitamin D
 D Calcium
- 30 Diagram 12 shows the root of a plant.
Rajah 12 menunjukkan akar bagi suatu pokok.

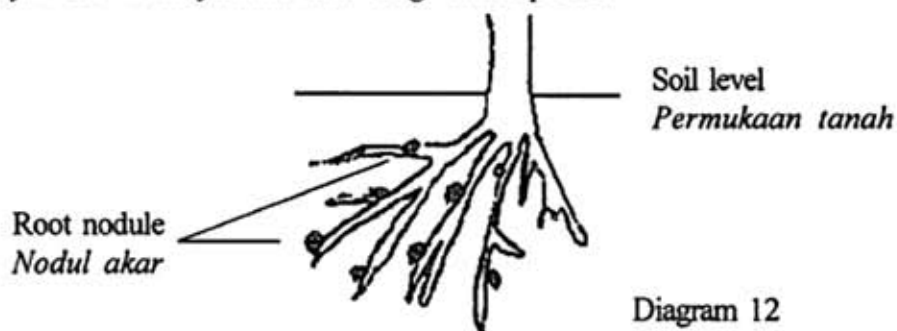


Diagram 12
 Rajah 12

Name the plant that has this root system.
Namakan tumbuhan yang mempunyai akar sebegini.

- A Maize plant
Pokok jagung
 B Jackfruit plant
Pokok nangka
 C Hibiscus plant
Pokok bunga raya
 D Groundnut plant
Kacang tanah

- 31 Table 2 shows the calorific value of different types of food.
Jadual 2 menunjukkan nilai kalori bagi jenis makanan yang berbeza.

Food <i>Makanan</i>	Quantity <i>Kuantiti</i>	Calorific value <i>Nilai kalori (kJ)</i>
White bread <i>Roti putih</i>	Per piece <i>Sekeping</i>	125
Butter <i>Mentega</i>	Table spoon <i>Sesudu besar</i>	100
Chicken <i>Ayam</i>	Per piece <i>Seketul</i>	220
Fried mee <i>Mee goreng</i>	Per cup <i>Secawan</i>	650

Table 2
Jadual 2

A student takes 1 cup of fried mee, 2 pieces of white bread, 2 table spoon of butter and 2 pieces of chicken for his breakfast. What is the total energy consumed?
Seorang murid mengambil 1 cawan mee goreng, 2 keping roti putih, 2 sudu mentega dan 2 ketul ayam untuk sarapan. Berapakah jumlah tenaga yang diperolehinya?

- A 1950 kJ
 B 1750 kJ
 C 1540 kJ
 D 1340 kJ
- 32 What is the effect of smoke and dust on plants?
Apakah kesan habuk dan asap ke atas tumbuhan?
- A Reduce the rate of absorption of water.
Mengurangkan kadar penyerapan air.
 B Reduce the rate of photosynthesis.
Mengurangkan kadar fotosintesis.
 C Increase the intake of oxygen.
Meningkatkan pengambilan oksigen.
 D Increase the rate of transpiration.
Meningkatkan kadar transpirasi.

- 33 The following information shows the characteristics of substance Z.
Maklumat berikut adalah berkaitan dengan bahan Z.

- Combustible
Mudah terbakar
- Reacts with acids to form esters
Bertindakbalas dengan asid membentuk ester
- Contains Hydrogen, Carbon and Oxygen elements
Mengandungi unsur Hidrogen, Karbon dan Oksigen

What is Z?

Apakah Z?

- A Petrol
Petrol
- B Alcohol
Alkohol
- C Fat
Lemak
- D Natural rubber
Getah asli
- 34 Diagram 13 shows the pattern of the dots printed on a thicker tape for a moving trolley.
Rajah 13 menunjukkan corak pada pita detik bagi gerakan sebuah troli.

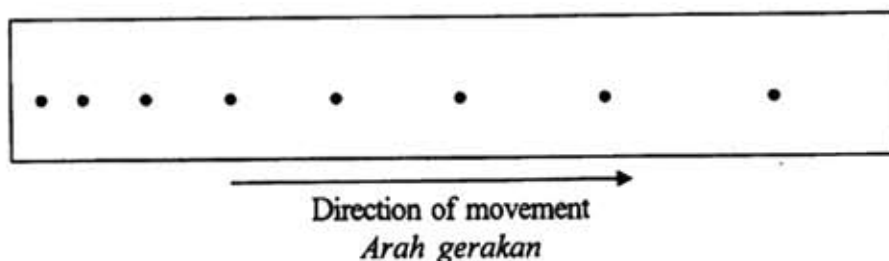


Diagram 13

Rajah 13

Which of the following describes the motion of the trolley?

Pernyataan yang manakah menggambarkan gerakan troli tersebut?

- A Uniform velocity
Halaju sekata
- B Increasing velocity
Halaju semakin bertambah
- C Decreasing velocity
Halaju semakin berkurang
- D Zero velocity
Halaju sifar

- 35 The equation represents a reaction which occurs in a process in which X is one of the products.
Persamaan di bawah mewakili tindakbalas yang berlaku dalam suatu proses di mana X adalah salah satu hasil.



What is the process and product X?
Apakah proses dan hasil X?

	Process <i>Proses</i>	Product X <i>Hasil X</i>
A	Esterification <i>Pengesteran</i>	Ester <i>Ester</i>
B	Fermentation <i>Fermentasi</i>	Alcohol <i>Alkohol</i>
C	Respiration <i>Respirasi</i>	Water <i>Air</i>
D	Photosynthesis <i>Fotosintesis</i>	Oxygen <i>Oksigen</i>

- 36 Diagram 14 below shows a section through an oil palm fruit.
Rajah 14 di bawah menunjukkan keratan rentas buah kelapa sawit.

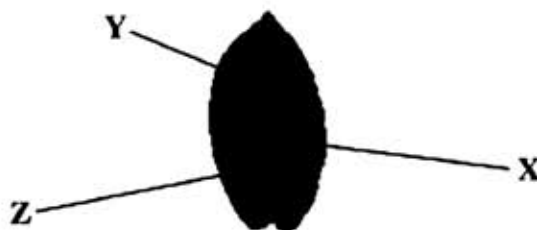


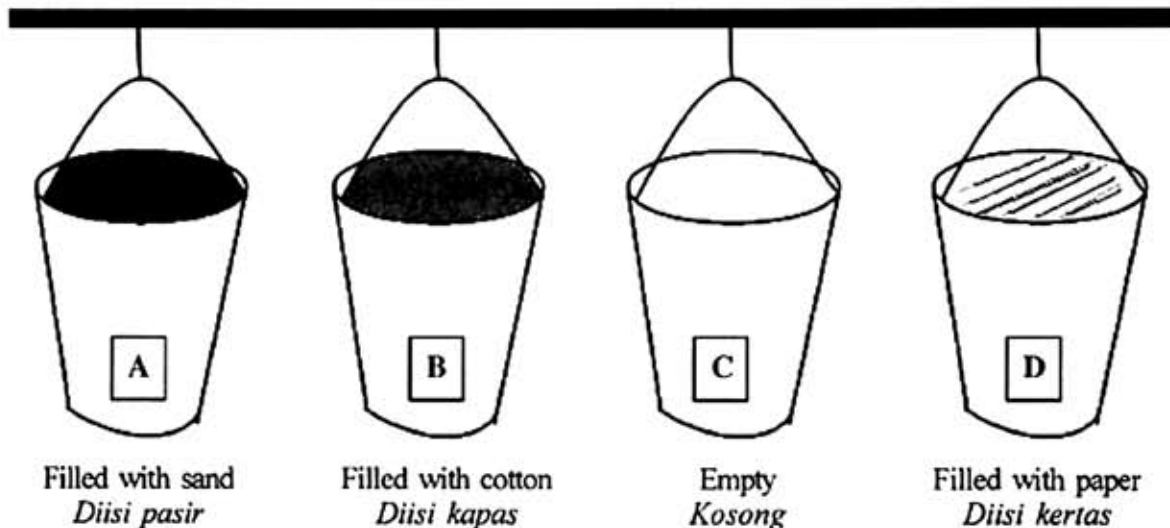
Diagram 14
Rajah 14

Which parts produce oil that can be extracted?
Bahagian manakah yang boleh diekstrak menghasilkan minyak?

- A Y only
Y sahaja
 B Y and Z only
Y dan Z sahaja
 C Y and X only
Y dan X sahaja
 D X and Z only
X dan Z sahaja

- 37 The purpose of sterilization of the oil palm fruit during the extraction of oil palm is to
Kegunaan pensterilan ke atas minyak kelapa sawit semasa pengekstrakan adalah
- I kill microorganisms
membunuh mikroorganisma
 - II soften the fruit
melembutkan buah
 - III destroy the enzymes that turn oil to acid
memusnahkan enzim yang menukarkan minyak kepada asid
- A I and II only
I dan II sahaja
 - B I and III only
I dan III sahaja
 - C II and III only
II dan III sahaja
 - D I, II and III
I, II dan III

- 38 Which of the following cans possesses the greatest inertia?
Manakah antara baldi yang berikut mempunyai inertia terbesar?



- 39 A piece of stone weighs 8N in air. When it is immersed in water, it weighs only 6N.
What is the volume of the water displaced by the stone?
Seketul batu seberat 8N. Bila direndam di dalam air beratnya hanya 6N.
Apakah isipadu air yang telah disesarkan?
- A 200 cm³
 - B 600 cm³
 - C 800 cm³
 - D 1400 cm³

- 40 Diagram 15 shows a wooden block with a weight of 150 N.
Rajah 15 menunjukkan blok kayu dengan berat 150 N.

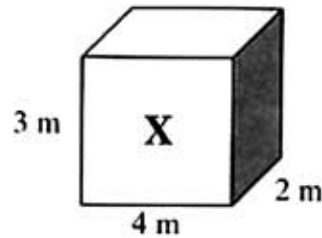


Diagram 15
Rajah 15

How much pressure is exerted on the floor if the wooden block is placed with the surface labeled X in contact with the floor?

Berapakah tekanan yang dikenakan pada lantai jika blok kayu diletakkan dengan permukaan berlabel X bersentuh dengan lantai?

- A 12.5 Nm^{-2}
 B 15.0 Nm^{-2}
 C 18.75 Nm^{-2}
 D 25.0 Nm^{-2}
- 41 Ramli cycles 600 metres in 120 seconds. What is Ramli's speed?
Ramli berbasikal sejauh 600 meter dalam masa 120 saat. Berapakah laju pergerakan Ramli?

$$[\text{Speed} = \frac{\text{Distance}}{\text{Time}}]$$

- A 0.2 ms^{-1}
 B 5.0 ms^{-1}
 C 480 ms^{-1}
 D 720 ms^{-1}

- 42 Diagram 16 shows a hydraulic system.
Rajah 16 menunjukkan satu sistem hidraulik.

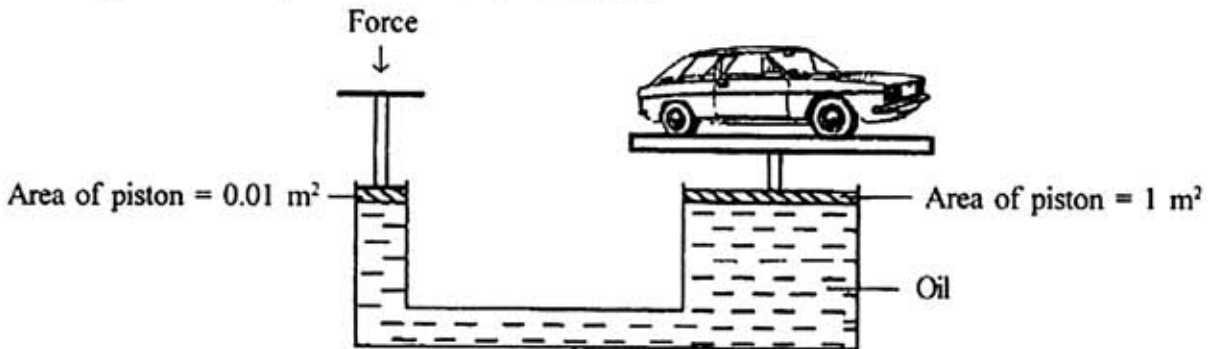


Diagram 16
Rajah 16

How much force is needed to lift a car with a weight of 10 000 N?

Berapakah daya yang diperlukan untuk mengangkat kereta yang mempunyai berat 10 000 N?

$$\text{Pressure} = \frac{\text{Force}}{\text{Surface area}}$$

- A 100 N
 B 1 000 N
 C 10 000 N
 D 100 000 N

- 43 Which of these following is NOT TRUE about the momentum of a lorry with a mass of 2000 kg moving at velocity of 15 ms^{-1} ?
Antara yang berikut, manakah yang TIDAK BENAR mengenai momentum sebuah lori berjisim 2000 kg yang sedang bergerak pada halaju 15 ms^{-1} ?
- A The momentum of the lorry will increase when its velocity increase.
Momentum lori itu akan bertambah jika halajunya bertambah.
 - B The momentum of the lorry increase when being accelerated.
Momentum lori itu bertambah apabila dipecutkan.
 - C The momentum of the lorry on velocity 15 ms^{-1} is 30000 kgms^{-1} .
Momentum lori itu pada halaju 15 ms^{-1} ialah 30000 kgms^{-1} .
 - D The momentum of the lorry decrease when the weight of its load is added.
Momentum lori itu berkurang jika berat beban yang dibawa olehnya ditambahkan.
- 44 Which of the following food preservation methods does NOT destroy its vitamins?
Antara kaedah pengawetan makanan yang berikut, manakah yang TIDAK menyebabkan vitaminnya musnah?
- A Canning
Pengetinan
 - B Bottling
Pembotolan
 - C Pasteurization
Pempasteuran
 - D Dehydration
Pendehidratan
- 45 Which of the following statement is NOT a characteristic of high quality paddy plant?
Antara pernyataan berikut, yang manakah BUKAN sifat pokok padi baka yang bermutu?
- A Taller plant
Pokok yang lebih tinggi
 - B Fast-maturity
Cepat matang
 - C More resistant to diseases
Lebih tahan terhadap serangan penyakit
 - D Produce dense of fruits
Menghasilkan buah yang lebat
- 46 Imbalance between the increase of people with the development of food production technology will cause the people to suffer from
Ketidakeimbangan antara pertambahan penduduk dengan kemajuan teknologi pengeluaran makanan akan menyebabkan manusia mengalami
- A anorexia nervosa
anoreksia nervosa
 - B hepatitis
hepatitis
 - C malnutrition
malnutrisi
 - D food poisoning
keracunan makanan

47 What should be done to natural rubber to produce tyres that are harder and more heat resistant?
Apakah yang harus dilakukan ke atas getah asli untuk menghasilkan tayar yang lebih keras dan tahan haba?

- A Add ammonia solution
Mecampurkan larutan ammonia
- B Heat with sulphur
Memanaskan dengan sulfur
- C Add ethanoic acid
Menambahkan asid etanoik
- D Add iron wire
Menambahkan dawai besi

48 Diagram 17 shows a chemical change.
Rajah 17 di bawah menunjukkan satu perubahan kimia.

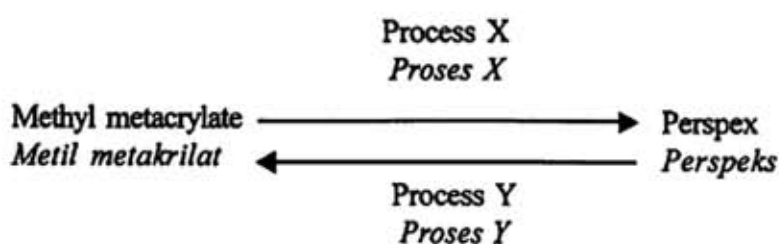
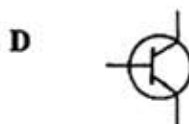
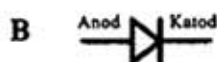


Diagram 17
Rajah 17

What are processes X and Y?
Apakah proses X dan proses Y?

- | Process X
<u><i>Proses X</i></u> | Process Y
<u><i>Proses Y</i></u> |
|--|--|
| A Depolymerization
<i>Penyahpolimeran</i> | Combustion
<i>Pembakaran</i> |
| B Polymerization
<i>Pempolimeran</i> | Combustion
<i>Pembakaran</i> |
| C Polymerization
<i>Pempolimeran</i> | Depolymerization
<i>Penyahpolimeran</i> |
| D Depolymerization
<i>Penyahpolimeran</i> | Polymerization
<i>Pempolimeran</i> |

- 49 Which of the following electronic component symbols increases electrical signal?
Antara simbol bagi alat elektronik yang berikut, manakah yang berfungsi menguatkan isyarat elektrik?



- 50 Diagram 18 shows a simple radio receiver system.
Rajah 18 menunjukkan sistem penerima radio ringkas.

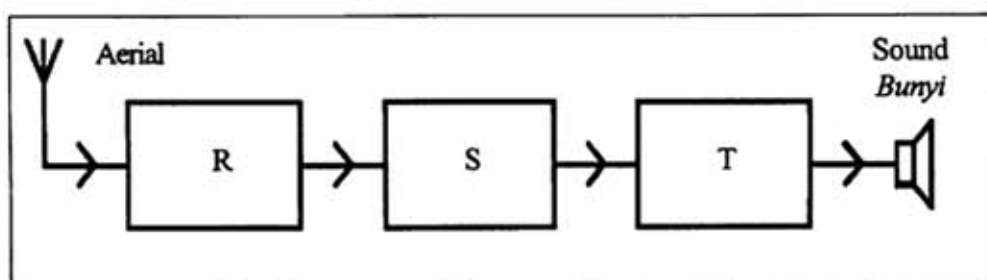


Diagram 18
Rajah 18

What is the function of part R?
Apakah fungsi bahagian R?

- A Increases electric signals
Menguatkan isyarat elektrik
- B Changes electric energy into sound energy
Menukarkan tenaga elektrik kepada tenaga bunyi
- C Separates audio waves from radio waves
Mengasingkan gelombang audio daripada gelombang radio
- D Chooses a frequency which is the same as the frequency of the chosen radio waves
Memilih satu frekuensi yang sepadan dengan frekuensi radio yang dikehendaki

END OF QUESTION PAPER
 KERTAS SOALAN TAMAT