

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

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**SAINS**  
**Tingkatan 5**

**Kertas 1**  
**Satu jam lima belas minit**

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**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.*

**INFORMATION FOR CANDIDATES**  
**MAKLUMAT UNTUK CALON**

1. This question paper consists of **50** questions  
*Kertas soalan ini mengandungi 50 soalan.*
2. Answer **all** questions  
*Jawab semua 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-tiap soalan diikuti oleh empat pilihan jawapan, iaitu **A, B, C, dan D**. bagi setiap soalan pilih satu jawapan sahaja. Hitamkan jawapan anda pada kertas jawapan objektif yang disediakan.*
4. If you wish to change your answer, erase the blackened mark that you have made. Then blacken the new answer.  
*Jika anda hendak menukar jawapan, padamkan tanda yang telah dibuat. Kemudian hitamkan jawapan yang baru.*
5. The diagrams in the questions provided are not drawn to scale unless *stated*.  
*Rajah yang mengiringi soalan tidak dilukis mengikut skala kecuali dinyatakan*
6. You may use a non-programmable scientific calculator.  
*Anda dibenarkan menggunakan kalkulator saintifik yang tidak boleh diprogram.*

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Kertas soalan ini mengandungi **24** halaman bercetak

- 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?*

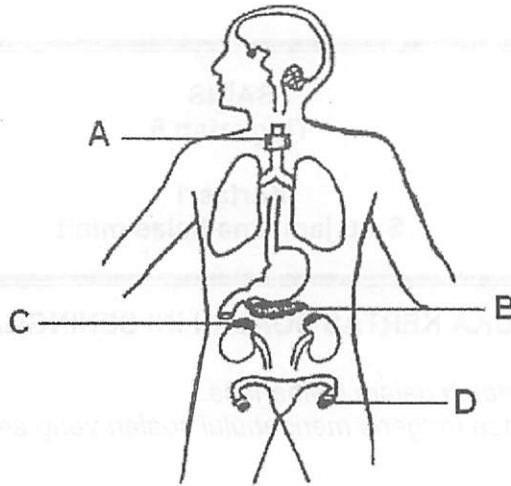


Diagram 1  
*Rajah 1*

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

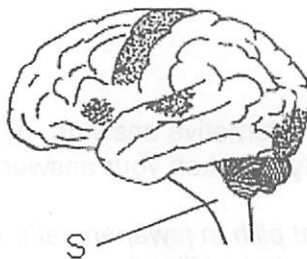


Diagram 2  
*Rajah 2*

What is labelled S?

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

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

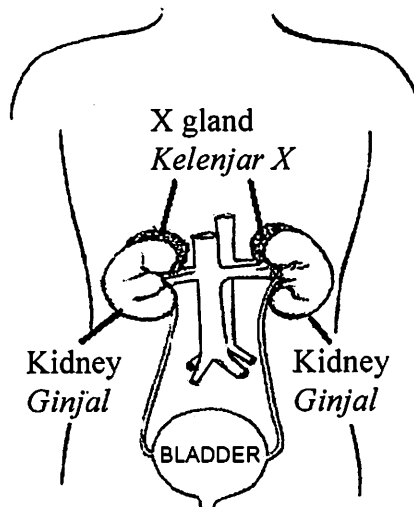


Diagram 3  
 Rajah 3

- A. Decreased sweating  
*Mengurangkan perpeluhan*
- B. Decreased heart rate  
*Mengurangkan kadar denyutan jantung*
- C. Decreased breathing rate  
*Mengurangkan kadar pernafasan*
- D. Increased supply of glucose in the blood  
*Menambahkan bekalan glukosa dalam darah*

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

- A Haemophilia  
Hemofillia
- B Down syndrome  
Down Sindrom
- C Turner's syndrome  
Sindrom Turner
- D Klinefelter's syndrome  
Sindrom Klinefelter

6 Which of the following are 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.

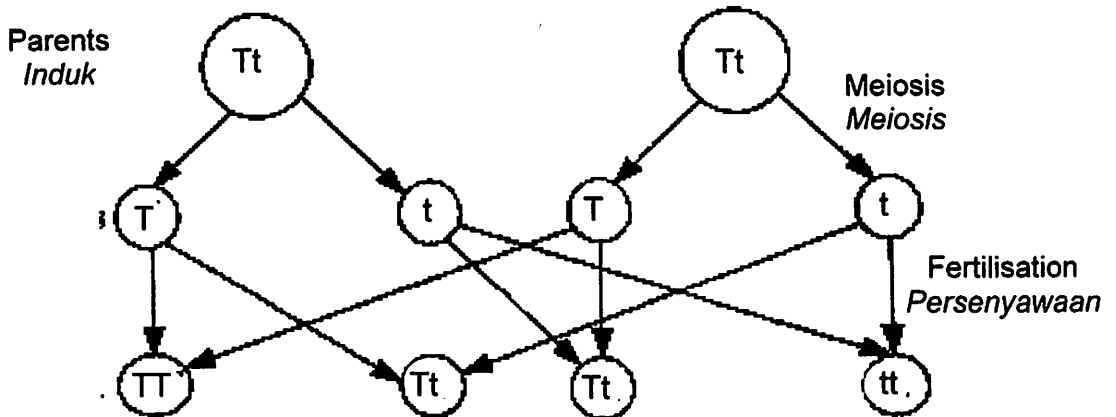


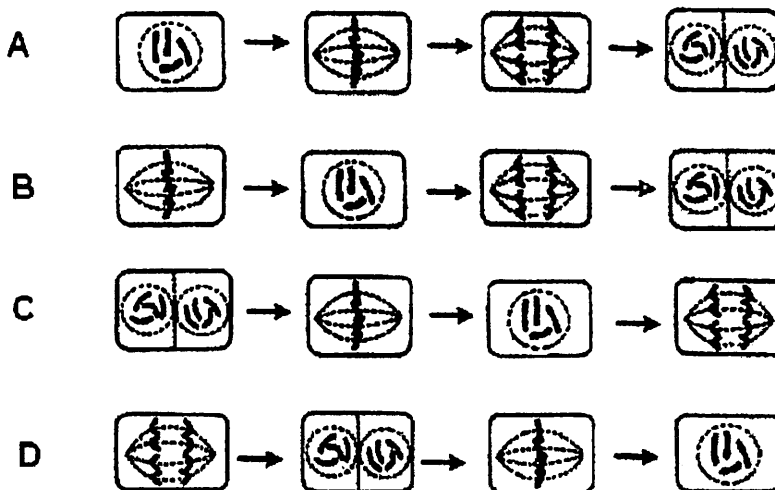
Diagram 4  
 Rajah 4

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

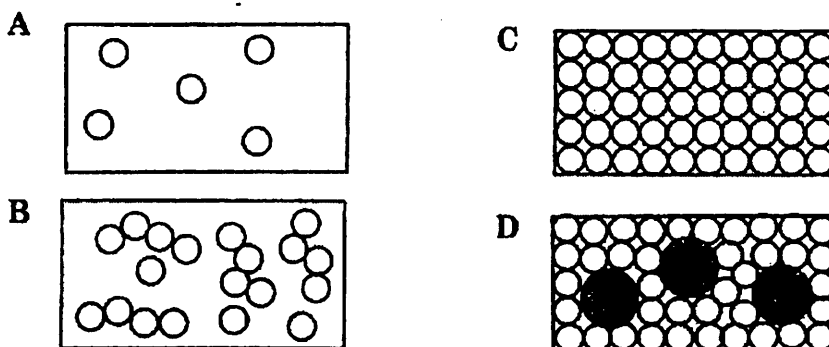
Berapakah nisbah bilangan anak pokok tinggi kepada bilangan anak pokok kerdil dalam generasi pertama?

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

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



- 9 Which of the following A, B, C or D represents liquid particles?  
 Manakah antara A, B, C atau D berikut mewakili zarah cecair?



- 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?

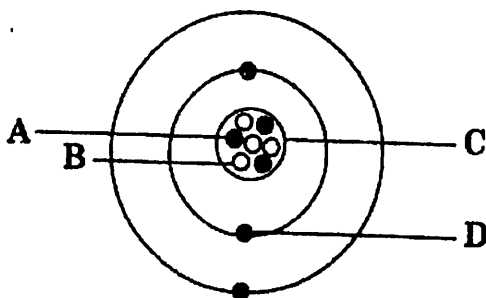


Diagram 5  
 Rajah 5

- 11 Choose the correct match between the change in the state of matter and its process.  
 Pilih padanan yang betul tentang perubahan keadaan jirim dan prosesnya.

	<b>Change in the state of matter</b> <i>Perubahan keadaan jirim</i>	<b>Process</b> <i>Proses</i>
A	Solid $\longrightarrow$ Liquid <i>Pepejal Cecair</i>	Boiling <i>Pendidihan</i>
B	Liquid $\longrightarrow$ Solid <i>Cecair Pepejal</i>	Freezing <i>Pembekuan</i>
C	Gas $\longrightarrow$ Liquid <i>Gas Cecair</i>	Sublimation <i>Pemejalwapan</i>
D	Solid $\longrightarrow$ Gas <i>Pepejal Gas</i>	Condensation <i>Kondensasi</i>

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

<b>Proton number</b> <i>Nombor proton</i>	<b>Number of neutrons</b> <i>Bilangan neutron</i>
8	9

**Table 1**  
**Jadual 1**

What is the nucleon number of atom P?  
 Berapakah nombor nukleon bagi atom P?

- A 8  
 B 9  
 C 17  
 D 72
- 13 Which of the following is a chemical change?  
 Antara yang berikut, yang manakah perubahan kimia?
- A Melting of ice  
*Peleburan 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  
*Pengekstrakan garam daripada air laut*

- 14 Diagram 6 shows part of the reactivity series of metals.  
 Rajah 6 menunjukkan sebahagian daripada siri kereaktifan logam.

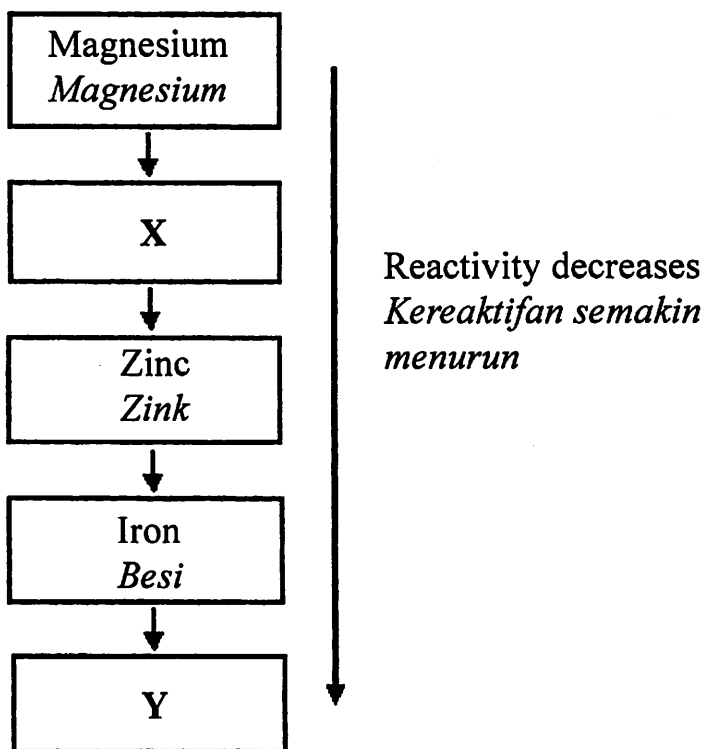


Diagram 6  
 Rajah 6

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

	X	Y
A	Tin <i>Stanium</i>	Copper <i>Kuprum</i>
B	Lead <i>Plumbum</i>	Aluminium <i>Aluminium</i>
C	Sodium <i>Natrium</i>	Lead <i>Plumbum</i>
D	Aluminium <i>Aluminium</i>	Tin <i>Stanium</i>

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

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

**Table 2**  
**Jadual 2**

Which reaction is an exothermic reactions ?

*Tindakbalas yang manakah merupakan tindakbalas eksotermik ?*

- |   |                           |   |                           |
|---|---------------------------|---|---------------------------|
| A | P and S<br><i>P dan S</i> | C | R and S<br><i>R dan S</i> |
| B | Q and R<br><i>Q dan R</i> | D | P and R<br><i>P dan R</i> |

- 16 The following information shows the characteristics of battery X. *Maklumat berikut menunjukkan ciri-ciri bateri X.*

<ul style="list-style-type: none"> <li>• Used in mobile phone <i>Digunakan dalam telefon mudah alih</i></li> <li>• Rechargeable <i>Boleh dicas semula</i></li> </ul>
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What is X?

*Apakah X?*

- A Dry cell  
*Sel kering*
- B Mercury cell  
*Sel 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.

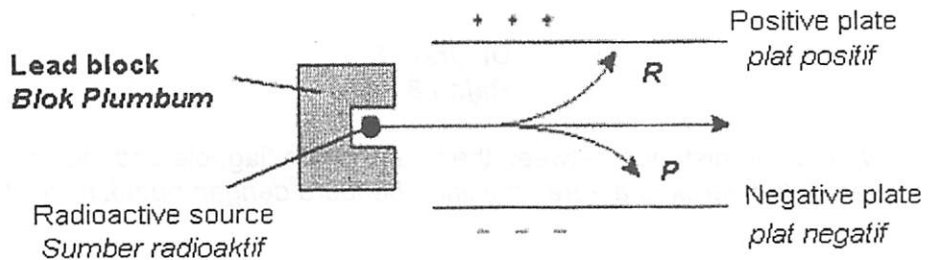
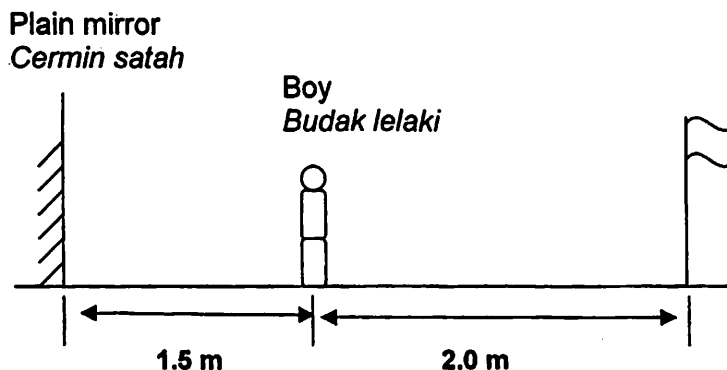


Diagram 7  
 Rajah 7

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 plane 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 menunjukkan seorang budak lelaki sedang berdiri di antara satu cermin satah dengan satu tiang bendera. Jarak budak lelaki dari cermin ialah 1.5 m dan jaraknya dari tiang bendera ialah 2.0 m*



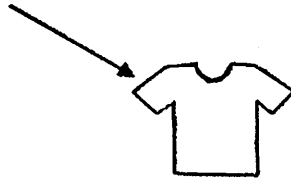
**Diagram 8**  
**Rajah 8**

What is the distance between the image of the flagpole and the boy ?  
*Berapakah jarak di antara imej tiang bendera 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 menggunakan 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*

Green light  
*Cahaya hijau*



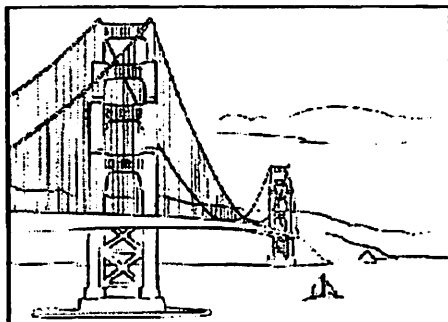
Yellow shirt  
*Baju kuning*

**Diagram 9**  
***Rajah 9***

The shirt will appear  
*Kemeja itu akan kelihatan*

- A red  
*merah*
  - 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 kemeja putih ditukar menjadi 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  
*Merah dan kuning*
  - D Red, yellow and blue  
*Merah, 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 fertilisers?  
*Bahan yang manakah digunakan untuk membuat asid nitrik dan baja?*
- A Sulphuric acid  
*Asid sulfurik*
  - B Alcohol  
*Alcohol*
  - C Ester  
*Ester*
  - D Ammonia  
*Ammonia*

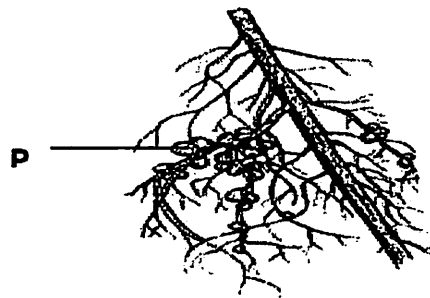
25 Which microorganism reproduces by formation of spores?  
*Mikroorganisma yang manakah membiak melalui penghasilan spora?*

- A Fungi  
*kulat*
- B Paramecium  
*Paramesium*
- C Virus  
*Virus*
- D Algae  
*Alga*

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

- A 100°C
- B 70°C
- C 37°C
- D 0°C

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

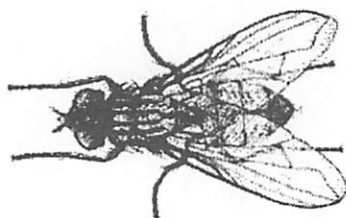


**Diagram 11**  
**Rajah 11**

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

- A Nitrifying bacteria  
*Bakteria penitritan*
- B Nitrogen-fixing bacteria  
*Bakteria pengikat nitrogen*
- C Parasitic bacteria  
*Bakteria parasit*
- D Saprophytic bacteria  
*Bakteria 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 <i>makanan</i>	Calorific value / nilai kalori( KJ /g)
Bread <i>roti</i>	10.12
Hard boiled egg <i>telur rebus</i>	6.59
Milk <i>susu</i>	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?

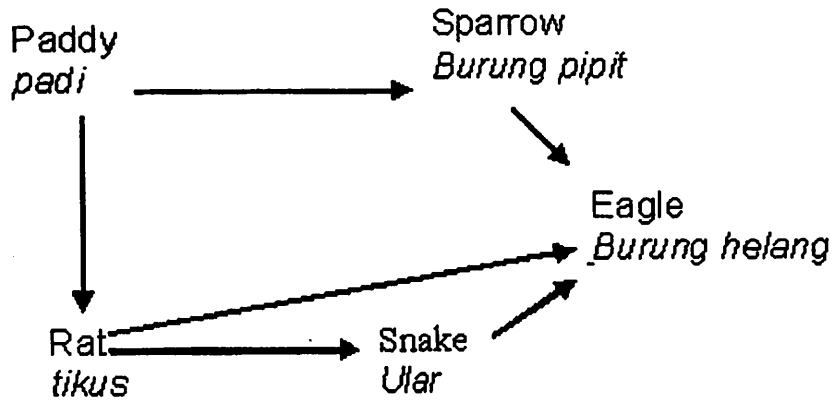
- A 0.85 kJ
- B 19.39 Kj
- C 193.90 kJ
- D 536.30 KJ

- 30 Which of the following factor can cause anorexia nervosa?  
*Manakah antara faktor berikut adalah penyebab anoreksia nervosa?*
- A Psychological problem  
*Masalah psikologi*
  - B Iron deficiency  
*Kekurangan zat besi*
  - C Protein deficiency  
*Kekurangan protein*
  - D Malnutrition  
*Malnutrisi*
- 31 The function of Nitrogen-fixing bacteria in the nitrogen cycle is to  
*Fungsi Bakteria pengikat nitrogen dalam kitar nitrogen ialah untuk*
- A convert nitrates to nitrogen  
*menukarkan nitrat kepada nitrogen*
  - B convert nitrites to nitrates  
*menukarkan nitrit kepada nitrat*
  - C convert ammonium ions to nitrites  
*menukarkan ion amonium kepada nitrit*
  - D convert nitrogen to nitrates  
*menukarkan nitrogen kepada nitrat*
- 32 Which gas is involved in the greenhouse effect?  
*Apakah gas yang terlibat dalam kesan rumah hijau?*
- A Ammonia  
*Ammonia*
  - B Carbon dioxide  
*Karbon dioksida*
  - C Sulphur dioxide  
*Sulfur dioksida*
  - D Nitrogen dioxide  
*Nitrogen dioksida*

33

Diagram 13 represents a food web in an ecosystem.

Rajah 13 menunjukkan siratan makanan dalam satu ekosistem



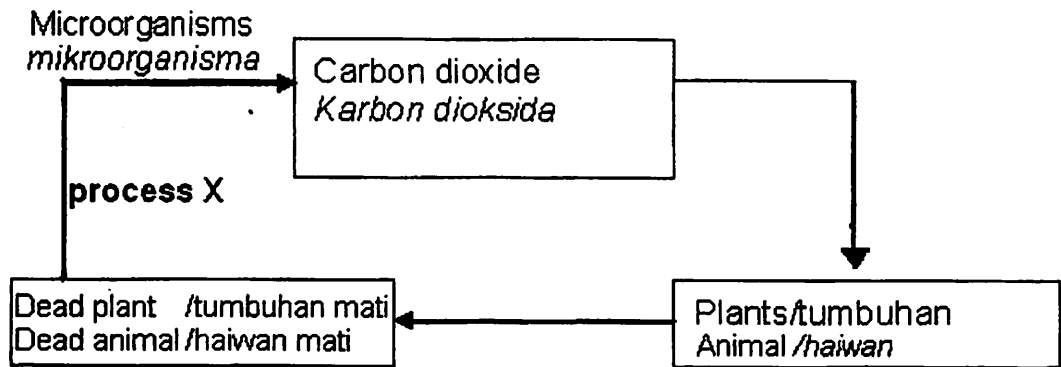
**Diagram 13**  
**Rajah 13**

Which of the following is a secondary and tertiary consumer?

Antara yang berikut yang manakah merupakan pengguna kedua dan pengguna ketiga?

- A Eagle  
Burung helang
- B Sparrow  
Burung pipit
- C Snake  
Ular
- D Rat  
Tikus

- 34 The diagram 14 shows part of carbon cycle.  
*Rajah 14 menunjukkan sebahagian kitar karbon.*



**Diagram 14**  
**Rajah 14**

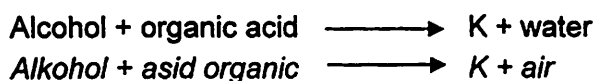
What is process X?  
*Apakah proses X?*

- A Decomposition  
*Penguraian*
  - B Nutrition  
*Pemakanan*
  - C Respiration  
*Respirasi*
  - 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 the temperature of the earth.  
*menyerap sebahagian daripada cahaya matahari untuk mengurangkan suhu bumi.*
  - C reflex sunlight to prevent green house effect.  
*memantulkan sinaran cahaya matahari untuk mengelakkan kesan rumah hijau.*
  - D avoid excess heat from reaching the earth which may cause global warming.  
*mengelakkan haba berlebihan sampai ke bumi yang menyebabkan pemanasan global.*

- 36 Which of the following is an organic compound from animals?  
*Manakah antara berikut merupakan sebatian organik daripada haiwan ?*

- A Cotton  
*Kapas*
- B Latex  
*Latek*
- C Egg  
*telur*
- D Silk  
*Sutera*

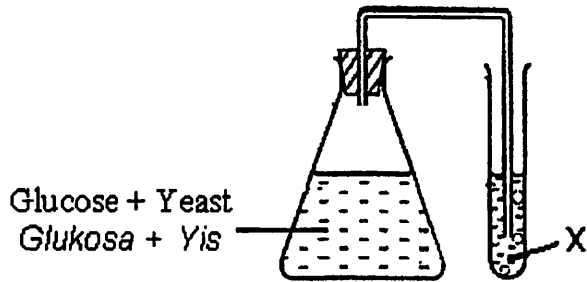
- 37 The following word equation shows a chemical reaction.  
*Persamaan perkataan berikut menunjukkan tindak balas kimia.*



What is K ?  
*Apakah K ?*

- A Ethanol  
*Etanol*
  - B Ammonia  
*Ammonia*
  - C Ester  
*Ester*
  - D Urea  
*Urea*
- 38 What causes the coagulation of latex after leaving it for a day?  
*Apakah yang menyebabkan getah membeku apabila ditinggalkan selama satu hari?*
- A Oxygen in the air oxidizes the latex.  
*Oksigen dalam udara mengoksidkan getah.*
  - B The sun light dries up the content of water in the latex.  
*Cahaya matahari mengeringkan kandungan air dalam susu getah.*
  - C Bacteria in the atmosphere react on the latex producing acid.  
*Bakteria dalam udara bertindak ke atas getah dan menghasilkan asid.*
  - D Fungi secrete enzyme on the latex and destroy the structure of the latex.  
*Fungi menghasilkan enzim dalam susu getah dan merosakkan struktur susu getah.*

- 39 Diagram 15 show an experiment to test the gas produced from the fermentation of glucose  
*Rajah 15 menunjukkan eksperimen untuk menguji gas yang dihasilkan daripada penapaian glukosa.*



**Diagram 15**  
**Rajah 15**

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

	X	Observation <i>Pemerhatian</i>
A	Sodium hydroxide <i>Natrium Hidroksida</i>	Cloudy <i>Keruh</i>
B	Lime water <i>Air kapur</i>	Cloudy <i>Keruh</i>
C	Sodium hydroxide <i>Natrium Hidroksida</i>	Colourless <i>Jernih</i>
D	Lime water <i>Air kapur</i>	Colourless <i>Jernih</i>

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

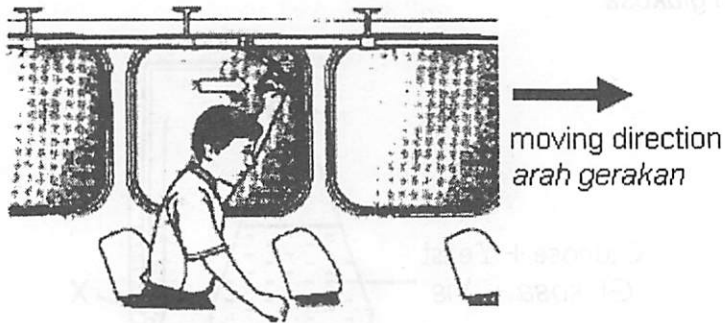


Diagram 16  
*Rajah 16*

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.*

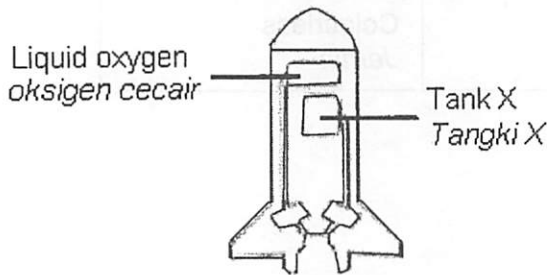
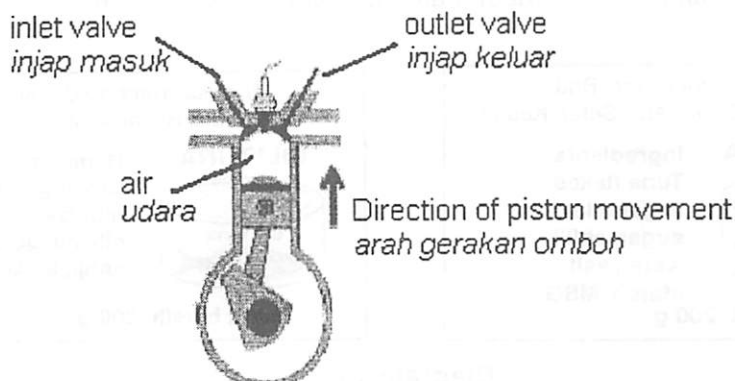


Diagram 17  
*Rajah 17*

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 Diagram 18 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 menunjukkan contoh label makanan yang tidak mematuhi Akta Makanan.*

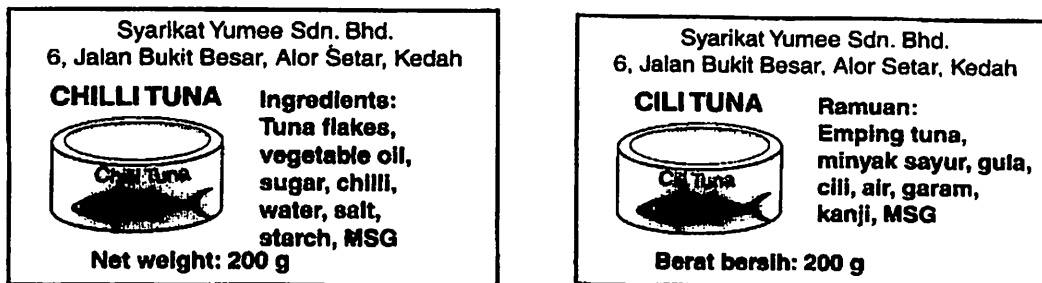


Diagram 19  
*Rajah 19*

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  
*Kuantiti makanan*
- 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 kaedah berikut 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*

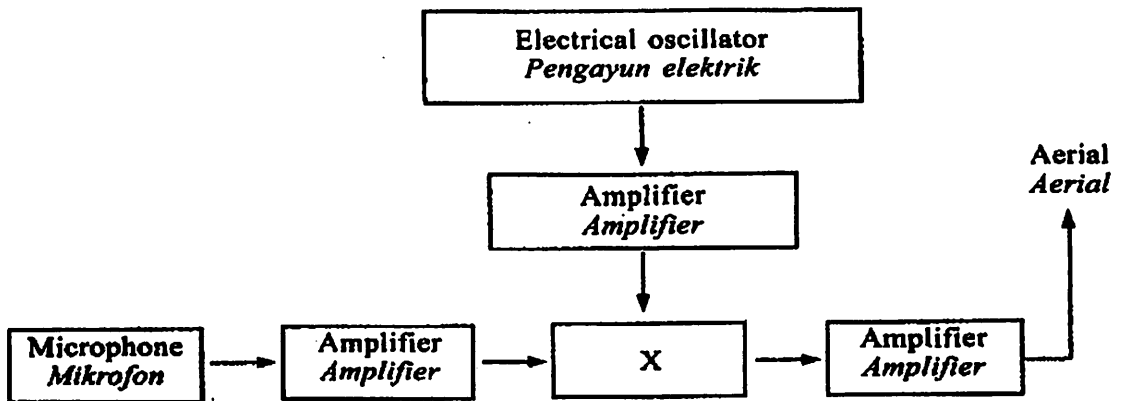
- 46 Which of the following is a thermosetting plastic?  
*Antara yang berikut yang manakah plastik termoset?*
- A Bakelite  
*Bakelit*
- B Polythene  
*Politena*
- C Perspex  
*Perspek*
- D Polystyrene  
*Polistirena*
- 47 Which method is most suitable for disposing of non-biodegradable plastic?  
*Kaedah manakah yang paling sesuai bagi pelupusan plastik yang tidak terbiodegrasi?*
- A Buried in the ground  
*Ditanam dalam tanah*
- B Burnt in an incinerator  
*Dibakar dalam insinerator*
- C Thrown into the river or sea  
*Buang dalam sungai atau laut*
- D Exposed to sunlight  
*Didedahkan kepada cahaya matahari*
- 48 The information shows the properties of a type of plastic.  
*Maklumat menunjukkan sifat-sifat sejenis plastik.*

- |  |
|--|
| <ul style="list-style-type: none"> <li>• can be remoulded repeatedly<br/><i>boleh diacukan berulang kali</i></li> <li>• do not have cross-linkage polymer<br/><i>tidak mempunyai polimer berangkai silang</i></li> </ul> |
|--|

Which of the following shows the above properties?  
*Antara berikut manakah yang menunjukkan sifat di atas?*

- A Bakelite  
*Bakelit*
- B Perpex  
*Perspeks*
- C Melamine  
*Melamina*
- D Epoxy resin  
*Pelekat epoksi*

- 49 What is the definition of radio waves frequency?  
*Apakah takrifan bagi frekuensi 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 between initial position and crest  
*Jarak di antara kedudukan asal dan puncak*
  - D The number of complete waves in one second  
*Bilangan gelombang lengkap dalam satu saat*
- 50 Diagram 20 shows a radio transmitter system.  
*Rajah 20 menunjukkan suatu sistem pemancar radio.*



**Diagram 20**  
**Rajah 20**

What is X?  
*Apakah X?*

- A Modulator  
*Modulator*
- B Tuning circuit  
*Litar penala*
- C Detector circuit  
*Litar pengesan*
- D Loud-speaker  
*Pembesar suara*

**END OF QUESTION PAPER**  
**KERTAS SOALAN TAMAT**