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**SCIENCE 1**

**MATA PELAJARAN**

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**TAHUN 2011**

**PROGRAM PENINGKATAN PRESTASI AKADEMIK SPM**

1511/1  
Sains  
Kertas 1  
Ogos 2011  
1 ¼ jam

**PERSIDANGAN KEBANGSAAN PENGETUA-PENGETUA  
SEKOLAH MENENGAH  
NEGERI KEDAH DARUL AMAN**

**PEPERIKSAAN PERCUBAAN SPM 2011**

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**SAINS  
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. *Setiap soalan dimulai dengan soalan Bahasa Inggeris dan diikuti dengan terjemahannya dalam Bahasa Melayu.*

**INFORMATION FOR CANDIDATES**

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

**MAKLUMAT UNTUK CALON**

1. *Kertas soalan ini mengandungi 50 soalan.*
2. *Jawab semua soalan.*
3. *Jawab dengan menghitamkan ruangan yang betul pada kertas jawapan objektif.*
4. *Hitamkan satu ruangan sahaja bagi setiap jawapan.*
5. *Sekiranya anda hendak menukarkan jawapan, padamkan tanda yang telah dibuat. Kemudian hitamkan jawapan yang baru.*
6. *Rajah yang mengiringi soalan tidak dilukiskan mengikut skala kecuali dinyatakan.*
7. *Satu senarai rumus disediakan di bawah.*
8. *Anda dibenarkan menggunakan kalkulator saintifik yang tidak boleh diprogramkan.*

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Kertas soalan ini mengandungi 27 halaman bercetak

1. Diagram 1 shows a neurone. Which is dendrite?  
Rajah 1 menunjukkan satu neuron. Yang manakah adalah dendrit?

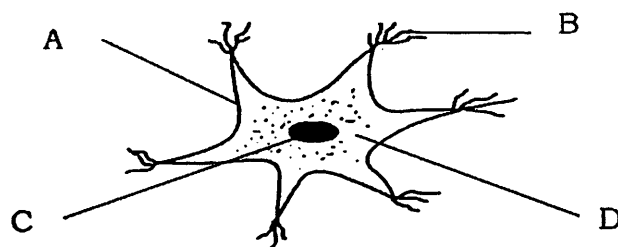


Diagram 1  
Rajah 1

2. Diagram 2 shows the flow of impulses involving a type of sense.  
Rajah 2 menunjukkan pengaliran impuls yang melibatkan sejenis deria.

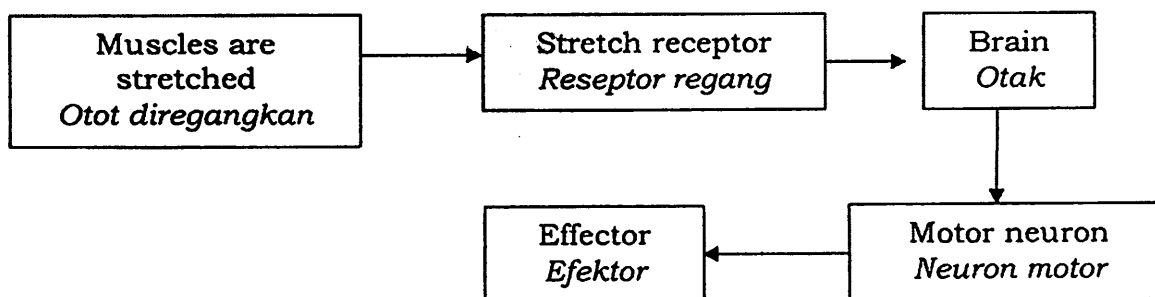


Diagram 2  
Rajah 2

Which sense is involved?  
Deria yang manakah terlibat?

- A Taste  
Rasa
- B Touch  
Sentuhan
- C Hearing  
Pendengaran
- D Kinaesthetic  
Kinestesis

- 3 Which of the following activity involves cerebellum?  
*Antara aktiviti berikut yang manakah melibatkan serebelum?*

- A Reading  
*Membaca*
- B Dancing  
*Menari*
- C Sneezing  
*Bersin*
- D Breathing  
*Bernafas*

- 4 Diagram 3 shows an endocrine gland X.  
*Rajah 3 menunjukkan satu kelenjar endokrin X.*

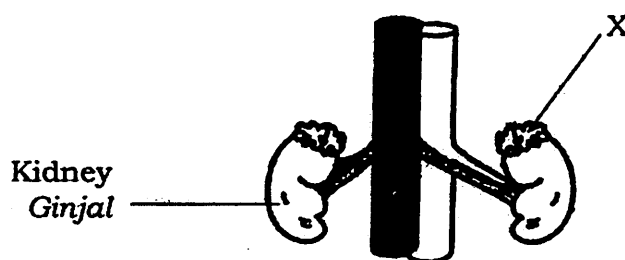


Diagram 3  
*Rajah 3*

Gland X controls  
*Kelenjar X mengawal*

- A menstrual cycle  
*kitaran haid*
- B growth of bones  
*pertumbuhan tulang*
- C body's metabolism  
*metabolisme badan*
- D increase the rate of heart beat  
*meningkatkan kadar denyutan jantung*

5 Which of the following heredity unit carries genetic information?  
 Antara berikut unit keturunan yang manakah membawa maklumat genetik?

- A Gene  
Gen
- B Gamete  
Gamet
- C Cytoplasm  
Sitoplasma
- D Chromosome  
Kromosom

6 Diagram 4 shows the stages in the formation of a baby.  
 Rajah 4 menunjukkan peringkat pembentukkan seorang bayi.

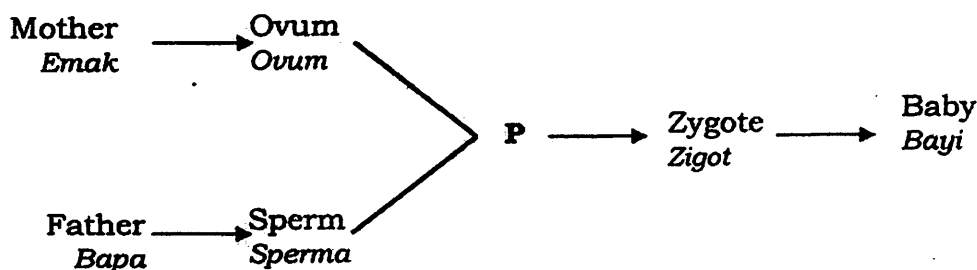


Diagram 4  
Rajah 4

What is process P?  
 Apakah proses P?

- A Mitosis  
Mitosis
- B Meiosis  
Meiosis
- C Fertilisation  
Persenyawaan
- D Crossing over  
Pindah silang

- 7 Diagram 5 shows the stage of formation of twins.  
*Rajah 5 menunjukkan pembentukan sepasang kembar.*

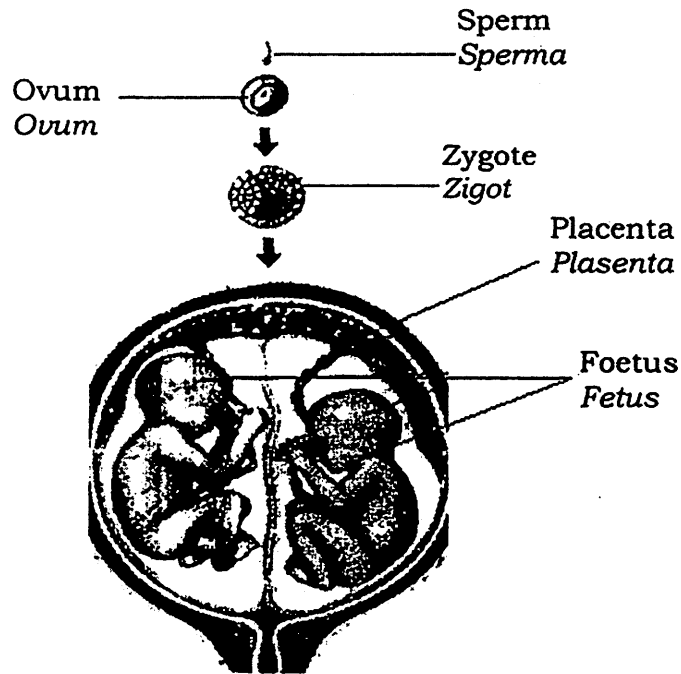
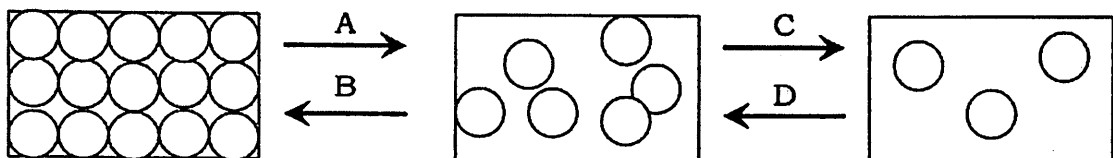


Diagram 5  
*Rajah 5*

What is the characteristic of the twins?  
*Apakah ciri kembar tersebut?*

- A Same genetic traits  
*Ciri-ciri genetik yang sama*
  - B Different sex of twins  
*Jantina anak kembar berbeza*
  - C More than one ovum involved  
*Lebih dari satu ovum terlibat*
  - D Each foetus has its own placenta  
*Setiap fetus mempunyai plasenta tersendiri*
8. Which change represents the process of freezing?  
*Perubahan yang manakah mewakili proses pembekuan?*



- 9 Diagram 6 shows the nucleus of an atom.  
*Rajah 6 menunjukkan nukleus bagi suatu atom.*

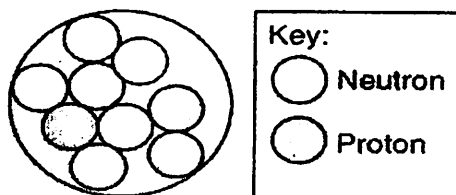


Diagram 6  
*Rajah 6*

What is the nucleon number for the atom?  
*Berapakah nombor nukleon bagi atom itu?*

- A 4  
 B 5  
 C 6  
 D 9
- 10 Diagram 7 shows an incomplete Periodic Table.  
*Rajah 7 menunjukkan Jadual Berkala yang tidak lengkap.*

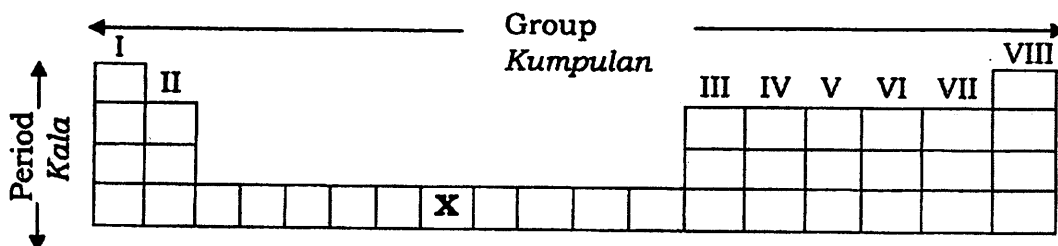


Diagram 7  
*Rajah 7*

What is X?  
*Apakah unsur X?*

- A Metal  
*Logam*  
 B Noble gas  
*Gas adi*  
 C Non-metal  
*Bukan logam*  
 D Transition element  
*Unsur peralihan*

- 11 The information shows the characteristics of substance X.  
*Maklumat berikut menunjukkan ciri-ciri suatu bahan X.*

- Able to conduct electricity in molten state.  
*Boleh mengkonduksi elektrik dalam keadaan leburan.*
- Cannot conduct electricity in solid state.  
*Tidak boleh mengkonduksi elektrik dalam keadaan pepejal*

What is substance X?  
*Apakah bahan X?*

- A Copper  
*Kuprum*
  - B Sulphur  
*Sulfur*
  - C Carbon dioxide  
*Karbon dioksida*
  - D Lead (II) bromide  
*Plumbum (II) bromida*
- 12 Tin can be extracted from its ore by using carbon because  
*Timah boleh diekstrak dari bijihnya dengan menggunakan karbon kerana*
- A carbon is cheap  
*karbon adalah murah*
  - B carbon is easily available  
*karbon mudah diperolehi*
  - C carbon is more reactive than tin  
*karbon lebih reaktif daripada timah*
  - D tin ore can be easily decomposed by heat  
*bijih timah mudah terurai apabila dipanaskan*

- 13 Diagram 8 shows the action of dissolving sugar in distilled water.  
*Rajah 8 menunjukkan tindakan melarutkan gula di dalam air suling.*

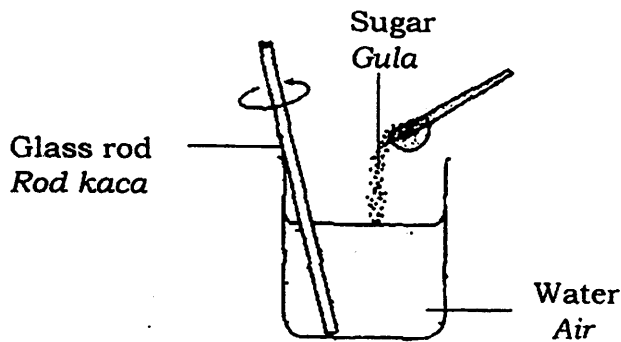


Diagram 8  
*Rajah 8*

What is the characteristic of the changes involved?  
*Apakah ciri bagi perubahan yang berlaku?*

- A Irreversible  
*Tidak berbalik*
  - B Needs a lot of energy  
*Memerlukan tenaga yang banyak*
  - C Produces new substances  
*Menghasilkan bahan baru*
  - D Involves only physical changes  
*Melibatkan perubahan fizikal sahaja*
- 14 What type of battery is used in a mobile phone?  
*Apakah jenis bateri yang digunakan oleh telefon bimbit?*
- A Alkaline battery  
*Bateri alkali*
  - B Lead-acid battery  
*Bateri asid-plumbum*
  - C Nickel cadmium battery  
*Bateri nikel kadmium*
  - D Argentum oxide battery  
*Bateri argentum oksida*

15 Which reaction needs light?  
Tindak balas yang manakah memerlukan cahaya?

- A Electrolysis  
*Elektrolisis*
- B Electroplating  
*Penyaduran*
- C Photosynthesis  
*Fotosintesis*
- D Purification of metals  
*Penulenan logam*

16 Diagram 9 shows two types of radioactive radiations P and R in an electric field.  
Rajah 9 menunjukkan dua jenis sinaran radioaktif P dan R di dalam medan elektrik

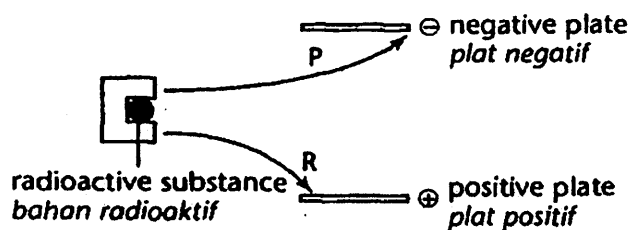


Diagram 9  
Rajah 9

What are radiations P and R?  
Apakah sinaran P dan R ?

	P	R
A	Alpha <i>Alfa</i>	Beta <i>Beta</i>
B	Gamma <i>Gama</i>	Beta <i>Beta</i>
C	Beta <i>Beta</i>	Gamma <i>Gama</i>
D	Beta <i>Beta</i>	Alpha <i>Alfa</i>

- 17 Diagram 10 shows the penetrating power of ray P.  
*Rajah 10 menunjukkan kuasa penembusan sinar P.*

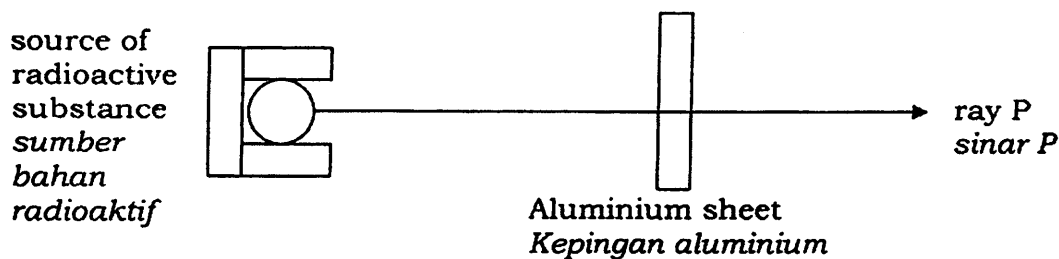


Diagram 10  
*Rajah 10*

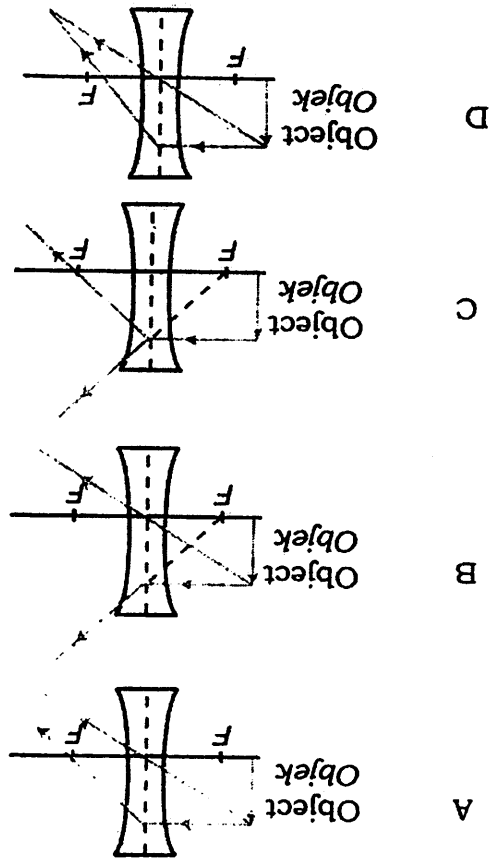
Which of the following about ray P is **correct**?  
*Antara berikut yang manakah **benar** tentang sinar P?*

- A Positively charged  
*Bercas positif*
  - B Has a low penetrating power  
*Mempunyai kuasa penembusan yang rendah*
  - C Can only be blocked by a thick lead block  
*Hanya boleh dihalang oleh blok plumbum yang tebal*
  - D Deflected away from the positive plate of the electric field  
*Dipesongkan menjauhi plat positif medan elektrik*
- 18 Which radioactive substance is **correctly** matched ?  
*Manakah bahan radioaktif yang **betul** dipadankan ?*

	Radioactive substance <i>Bahan radioaktif</i>	Uses <i>Kegunaan</i>
A	Phosphorus-32 <i>Fosforus-32</i>	Kill cancer cells <i>Membunuh sel-sel kanser</i>
B	Carbon-14 <i>Karbon-14</i>	Determine the age of ancient materials <i>Menentukan usia bahan-bahan purba</i>
C	Sodium-24 <i>Natrium-24</i>	Study the rate of absorption of fertilisers in plants <i>Mengkaji kadar penyerapan baja oleh tumbuhan</i>
D	Cobalt-60 <i>Kobalt-60</i>	To locate the source of leakage in underground pipes <i>Untuk mengesan punca kebocoran paip di bawah tanah</i>

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Which ray diagrams is correct?  
Rajah sinar yang manakah betul?

19

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11

- 20 Diagram 11 shows an image formed by a plain mirror.  
*Rajah 11 menunjukkan imej yang terbentuk oleh satu cermin satah.*



Diagram 11  
*Rajah 11*

What is the characteristic of the image?  
*Apakah ciri imej?*

- A Real  
*Nyata*
  - B Inverted  
*Songsang*
  - C Laterally inverted  
*Songsang sisi*
  - D Smaller than the object  
*Lebih kecil dari objek*
- 21 Diagram 12 shows the structure of a camera.  
*Rajah 12 menunjukkan struktur suatu kamera.*

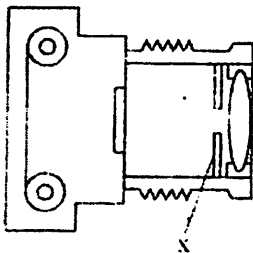


Diagram 12  
*Rajah 12*

Which part of the human eye has the same function as X?  
*Bahagian mata yang manakah mempunyai fungsi yang sama dengan X?*

- A Iris  
*Iris*
- B Pupil  
*Anak mata*
- C Retina  
*Retina*
- D Eye lens  
*Kanta mata*

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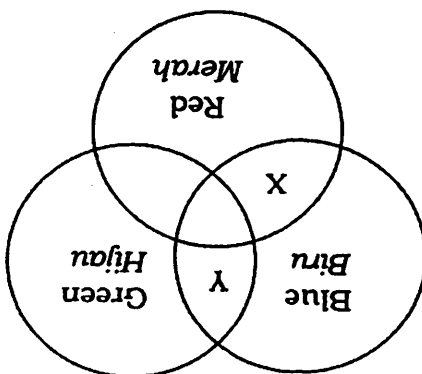
- A 1 : 3
- B 3 : 1
- C 2 : 3
- D 3 : 2

23 What is the ratio of nitrogen to hydrogen in the Haber Process?  
 Apakah nisbah nitrogen kepada hidrogen dalam Proses Haber?

X	Yellow	Magenta	Magenta	Yellow	Kuning
	Cyan	Magenta	Cyan	Cyan	Sian
	Sian	Magenta	Sian	Magenta	Magenta
	Yellow	Cyan	Yellow	Yellow	Kuning

What are the colours of X and Y?  
 Apakah warna X dan Y?

Diagram 13  
 Rajah 13



22 Diagram 13 shows the addition of coloured lights.  
 Rajah 13 menunjukkan penambahan cahaya berwarna.

24 Which of the following is **not** the purpose of alloying?  
Antara berikut yang manakah **bukan** fungsi pengaloiian?

- A Increase hardness  
*Menambah kekerasan*
- B Prevent corrosion  
*Menghalang kakisan*
- C Improve the appearance  
*Memperbaiki rupa bentuk*
- D Decrease the magnetic strength  
*Mengurangkan kekuatan magnetik*

25 Diagram 14 shows an experiment to prepare a nitrogeneous fertilizer.  
Rajah 14 menunjukkan eksperimen untuk menghasilkan baja bernitrogen.

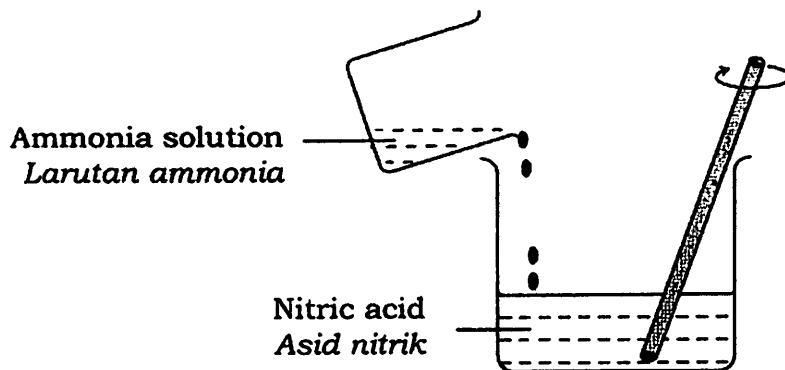
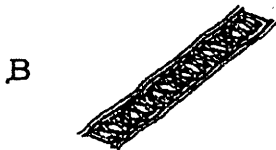


DIAGRAM 14  
Diagram 14

Name the fertilizer.  
Namakan baja itu

- A Ammonium phosphat  
*Ammonium fosfat*
- B Ammonium sulphate  
*Ammonium sulfat*
- C Ammonium chloride  
*Ammonium klorida*
- D Ammonium nitrate  
*Ammonium nitrat*

- 26 Which microorganism contains chlorophyll?  
*Mikroorganisma yang manakah mengandungi klorofil?*



- 27 A group of students have the following symptoms:  
*Sekumpulan pelajar mempunyai gejala-gejala berikut:*

- Vomitting  
*Muntah*
- Diarrhoea  
*Cirit-birit*
- Dehydration  
*Pendehidratan*
- Muscle cramps  
*Kekejangan otot*

Which disease infects the students?  
*Penyakit yang manakah menjangkiti pelajar-pelajar tersebut?*

- A Cholera  
*Kolera*
- B Dysentery  
*Disenteri*
- C Hepatitis A  
*Hepatitis A*
- D Tuberculosis  
*Tibi*

28 A boy recovered from chicken pox disease will acquire  
*Seorang kanak-kanak lelaki sembuh daripada penyakit campak akan memperoleh*

- A natural active immunity  
*keimunan aktif semulajadi*
- B natural passive immunity  
*keimunan pasif semulajadi*
- C artificial active immunity  
*keimunan aktif buatan*
- D artificial passive immunity  
*keimunan pasif buatan*

29 Which substance is used to clean toilet ?  
*Bahan yang manakah digunakan untuk mencuci tandas?*

- A Antibiotic  
*Antibiotik*
- B Antiseptic  
*Antiseptik*
- C Antiserum  
*Antiserum*
- D Disinfectant  
*Disinfektan*

30 The following information shows the health problem of a man.  
*Maklumat berikut menunjukkan masalah kesihatan seorang lelaki.*

- |  |
|--|
| <ul style="list-style-type: none"><li>• Thrombosis<br/><i>Trombosis</i></li><li>• Arteriosclerosis<br/><i>Arteriosklerosis</i></li><li>• High blood pressure<br/><i>Tekanan darah tinggi</i></li></ul> |
|--|

What should be done to overcome his problem ?  
*Apakah yang perlu dilakukan untuk mengatasi masalahnya?*

- A Increase the intake of salt  
*Menambah pengambilan garam*
- B Increase the intake of sugar  
*Menambah pengambilan gula*
- C Reduce the intake of fat and cholesterol  
*Mengurangkan pengambilan lemak dan kolesterol*
- D Reduce the intake of fresh fruits and vegetables  
*Mengurangkan pengambilan buah-buahan dan sayur-sayuran*

- 31 Table 1 shows the calorific values for three food classes.  
*Jadual 1 menunjukkan nilai kalori bagi tiga kelas makanan.*

Food <i>Makanan</i>	Calorific value /kJ g <sup>-1</sup> <i>Nilai kalori/kJ g<sup>-1</sup></i>
Protein <i>Protein</i>	16.7
Fat <i>Lemak</i>	37.6
Carbohydrate <i>Karbohidrat</i>	16.7

Table 1  
*Jadual 1*

Fatimah eats food M which contains 2g of protein, 2.5g of fat and 6g of carbohydrate. What is the calorific value of food M?  
*Fatimah memakan makanan M yang mengandungi 2g protein, 2.5g lemak dan 6g karbohidrat. Berapakah nilai kalori makanan M?*

- A 71.0 kJ
  - B 81.5 kJ
  - C 227.6 kJ
  - D 710.0 kJ
- 32 Diagram 15 shows a part of nitrogen cycle.  
 Which stage **A**, **B**, **C** and **D** involves decomposing bacteria?  
*Rajah 15 menunjukkan sebahagian daripada kitar nitrogen.  
 Peringkat **A**, **B**, **C** dan **D** yang manakah melibatkan bakteria pereputan.*

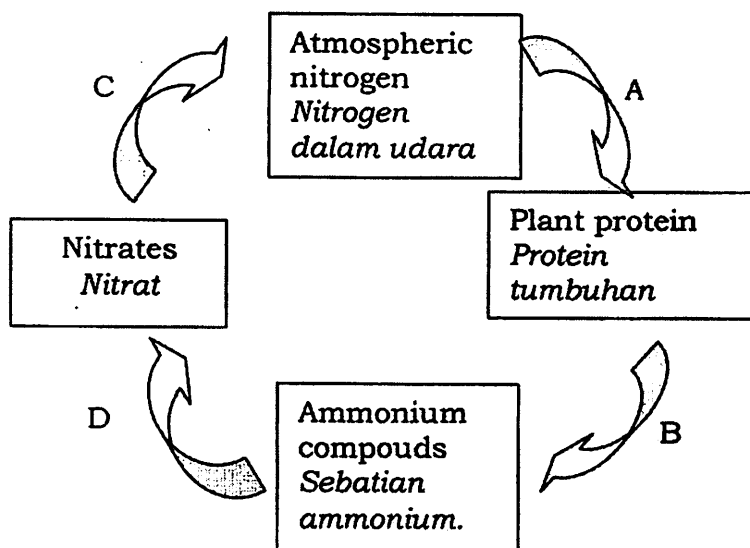


Diagram 15  
 Rajah 15

- 33 The information shows the uses of substance X.  
Maklumat menunjukkan kegunaan bahan X.

- Coolants in refrigerator  
*Bahan pendingin dalam peti sejuk*
- Substance in aerosols  
*Bahan dalam aerosol*

The effect of the uses of substance X is  
Kesan penggunaan bahan X ialah

- A water pollution  
*pencemaran air*
  - B green house effect  
*kesan rumah hijau*
  - C depletion of ozone layer  
*penipisan lapisan ozon*
  - D decrease of global temperature  
*penurunan suhu dunia*
- 34 Diagram 16 shows a human activity.  
Rajah 16 menunjukkan suatu aktiviti manusia.



Diagram 16  
Rajah 16




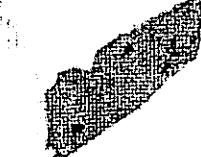
Which solid waste is produced from this activity?  
Sisa pepejal yang manakah dihasilkan dari aktiviti ini?

- A Mercury  
*Merkuri*
- B Sulphur  
*Sulfur*
- C Carbon  
*Karbon*
- D Lead  
*Plumbum*

35 Which is the best method used by farmers to replace pesticides?  
*Kaedah manakah paling baik digunakan oleh petani untuk menggantikan racun perosak?*

- A Vector control  
*Kawalan vector*
- B Fertilizer control  
*Kawalan baja*
- C Biological control  
*Kawalan biologi*
- D Insecticide control  
*Kawalan racun serangga*

36 Which of the following is an inorganic compound?  
*Manakah antara berikut adalah sebatian bukan organik ?*

A		Cotton clothes <i>Pakaian kapas</i>
B		marble <i>marmar</i>
C		egg <i>telur</i>
D		cheese <i>keju</i>

- 37 The information shows the properties of substance Z.  
Maklumat menunjukkan ciri-ciri bahan Z.

- |  |
|--|
| <ul style="list-style-type: none"> <li>• volatile<br/><i>mudah meruap</i></li> <li>• flammable<br/><i>mudah terbakar</i></li> <li>• miscible in water<br/><i>larut campur dalam air</i></li> </ul> |
|--|

What is Z?  
Apakah bahan Z?

- A Petrol  
*Petrol*
  - B Ethanol  
*Etanol*
  - C Kerosene  
*Kerosin*
  - D Palm oil  
*Minyak sawit*
- 38 Diagram 17 shows a reaction of ethanoic acid on latex coagulation.  
Rajah 17 menunjukkan tindak balas asid etanoik ke atas lateks.

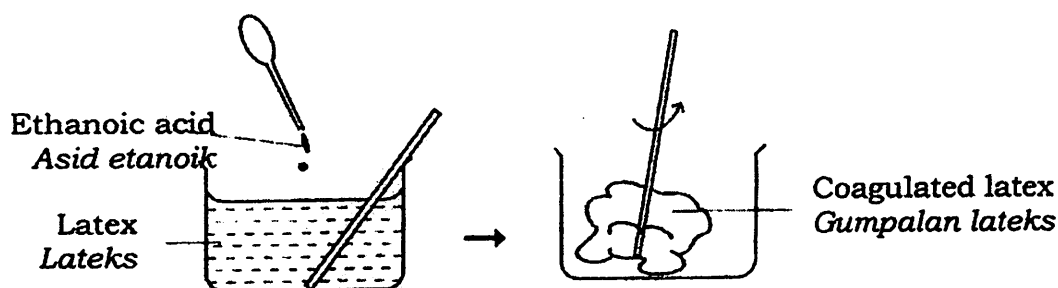


Diagram 17  
Rajah 17

Which substance can replace ethanoic acid?  
Bahan yang manakah boleh menggantikan asid etanoik?

- A Lime juice  
*Jus limau*
- B Lime water  
*Air kapur*
- C Salt solution  
*Larutan garam*
- D Sugar solution  
*Larutan gula*

- 39 Diagram 18 shows a cross section of an oil palm fruit.  
Which part of **A**, **B**, **C** and **D** produces the most oil?  
*Rajah 18 menunjukkan keratan rentas sebiji buah kelapa sawit.  
Bahagian manakah antara **A**, **B**, **C** atau **D** yang menghasilkan paling banyak minyak.*

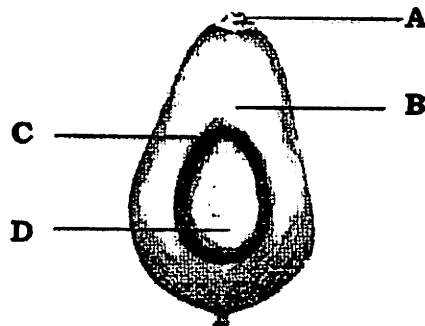


Diagram 18  
*Rajah 18*

- 40 Diagram 19 shows a four- stroke engine.  
*Rajah 19 menunjukkan satu enjin empat lejang.*

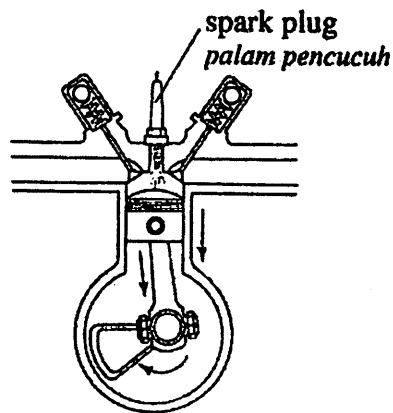


Diagram 19  
*Rajah 19*

Name the above stroke?  
*Namakan lejang di atas?*

- A Power stroke  
*Lejang kuasa*
- B Exhaust stroke  
*Lejang ekzos*
- C Induction stroke  
*Lejang pengambilan*
- D Compression stroke  
*Lejang mampatan*

- 41 A boy cycles 500 metres in 100 seconds.  
What is his speed?  
*Seorang budak lelaki berbasikal sejauh 500 meter dalam masa 100 saat.  
Apakah kelajuannya?*

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

$$\left[ \text{Laju} = \frac{\text{Jarak}}{\text{Masa}} \right]$$

- A 0.2 ms<sup>-1</sup>  
B 5.0 ms<sup>-1</sup>  
C 50.0 ms<sup>-1</sup>  
D 100 ms<sup>-1</sup>
- 42 Diagram 20 shows book A falls onto book C when book B is pulled out very quickly.  
*Rajah 20 menunjukkan buku A jatuh ke atas buku C apabila buku B ditarik dengan cepat.*

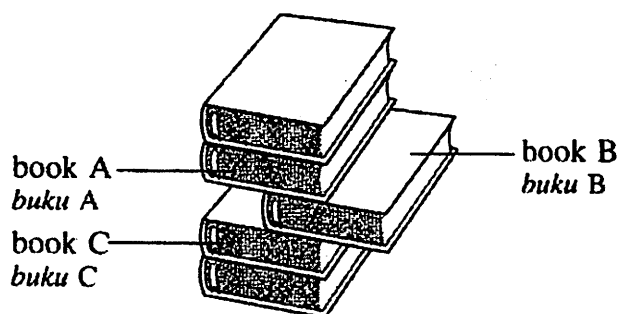


Diagram 20  
Rajah 20

What is the causes of the effect?  
*Apakah yang menyebabkan kesan itu?*

- A Inertia of book A  
*Inersia buku A*  
B Inertia of book B  
*Inersia buku B*  
C Momentum of book A  
*Momentum buku A*  
D Friction between book A and book B  
*Geseran antara buku A dengan buku B*

43 Which food processing method kill microorganisms ?  
*Manakah kaedah pemprosesan makanan yang membunuh mikroorganisma ?*

- A Pasteurization  
*Pempasteuran*
- B Dehydration  
*Pendehidratan*
- C Irradiation  
*Radiasi*
- D Cooling  
*Pendinginan*

44 The following information shows various farming method.  
*Maklumat berikut menunjukkan pelbagai kaedah pertanian.*

- Contour ploughing  
*Penanaman kontur*
- Terraces  
*Teres*
- Strip cropping  
*Penanaman berjalur*

What is the advantage of the above farming practice?  
*Apakah kelebihan mengamalkan kaedah pertanian di atas?*

- A Prevent soil erosion  
*Menghalang hakisan tanah*
- B Irrigate the farmland  
*Pengairan tanah pertanian*
- C Replace nutrients in the soil  
*Menggantikan nutrien dalam tanah*
- D Optimise the use of farmland  
*Mengoptimalkan penggunaan tanah pertanian*

45 What is the function of monosodium glutamate in instant noodles?  
*Apakah fungsi mononatrium glutamat dalam mee segera?*

- A Makes food tastier  
*Menjadikan makanan lebih sedap*
- B Reduce food spoilage  
*Mengurangkan kerosakan makanan*
- C Prevent food from oxidizing  
*Menghalang makanan dari teroksida*
- D Enrich the food with vitamin and minerals  
*Memperkayakan makanan dengan vitamin dan mineral*

- 46 Diagram 21 shows a process in the production of a synthetic material.  
*Rajah 21 menunjukkan satu proses dalam penghasilan bahan sintetik.*

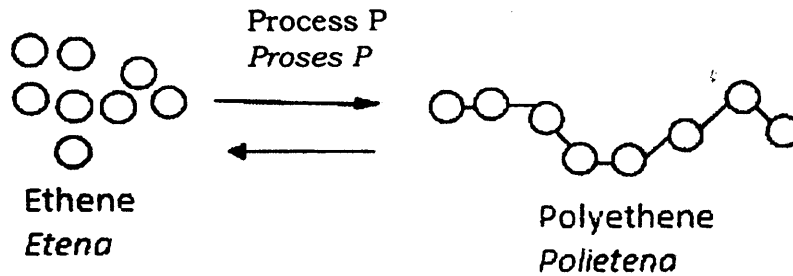
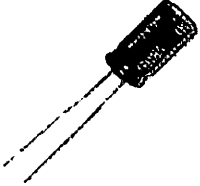





Diagram 21  
*Rajah 21*

What is process P ?  
*Apakah proses P ?*

- A Coagulation  
*Penggumpalan*
  - B Vulcanization  
*Pemvulkanan*
  - C Polymerization  
*Pempolimeran*
  - D Depolymerization  
*Penyahpolimeran*
- 47 Which is the best method to avoid plastic waste pollution?  
*Manakah kaedah terbaik untuk mengelakkan pencemaran sisa plastik?*
- A Burn the plastic in an open area  
*Bakar plastik di kawasan terbuka*
  - B Throw the plastic into a river  
*Buang plastik ke dalam sungai*
  - C Buried the plastic in the soil  
*Tanamkan plastik ke dalam tanah*
  - D Use biodegradable plastic  
*Guna plastik yang terbiodegradasi*

- 48 Which of the following component is matched **correctly**?  
*Manakah komponen berikut dipadankan dengan betul?*

	<b>Component Komponen</b>	<b>Function Fungsi</b>
A	 Capasitor <i>Kapasitor</i>	Amplifies the electric current <i>Menguatkan arus elektrik</i>
B	 Transistor <i>Transistor</i>	To produce magnetic field <i>Menghasilkan medan magnet</i>
C	 Inductor <i>Induktor</i>	Controls the size of current in the circuit <i>Mengawal saiz arus elektrik di dalam litar</i>
D	 Diode <i>Diod</i>	Allows current to flow in one direction only <i>Membenarkan arus elektrik mengalir dalam satu arah sahaja</i>

- 49 Diagram 22 shows a satellite communication system  
*Rajah 22 menunjukkan sistem komunikasi satelit*

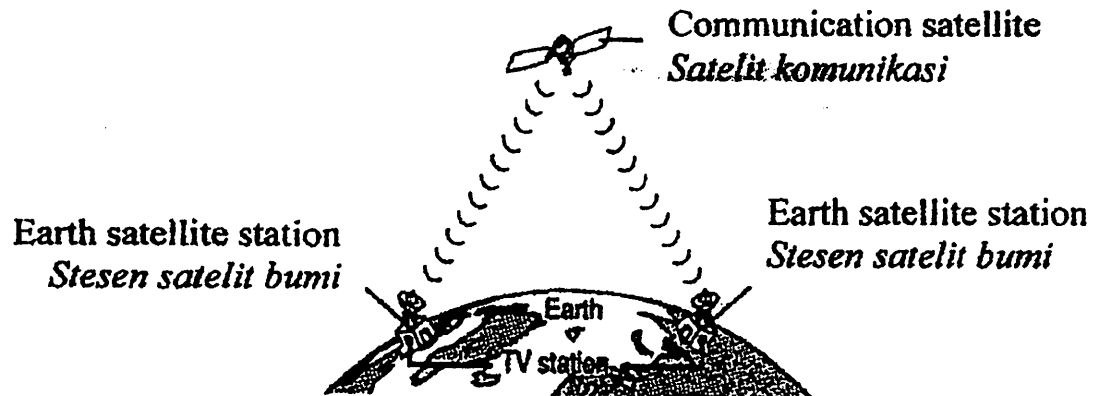


Diagram 22  
*Rajah 22*

What type of wave is used in this communication?  
*Apakah jenis gelombang yang digunakan dalam komunikasi ini?*

- A Microwave  
*Gelombang mikro*
- B Long wave  
*Gelombang panjang*
- C Short wave  
*Gelombang pendek*
- D Medium wave  
*Gelombang sederhana*

- 50 Diagram 23 shows components in a radio receiver system.  
 Rajah 23 menunjukkan komponen dalam satu sistem penerima radio.

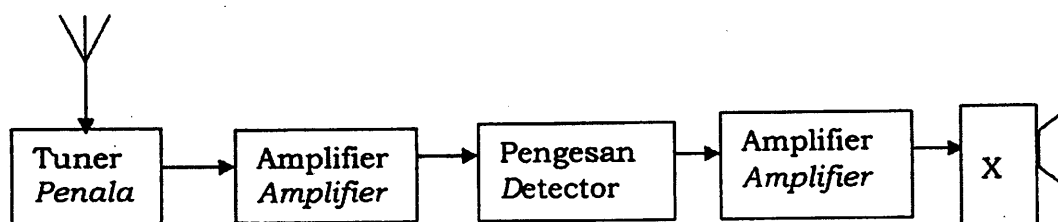


Diagram 23  
 Rajah 23

What is the function of X?  
 Apakah fungsi X ?

- A Increases electric signals  
 Menkuatkan isyarat elektrik
- B Receives modulated radio wave  
 Menerima gelombang radio termodulasi
- C Changes electric signal into sound energy  
 Menukarkan isyarat elektrik kepada tenaga bunyi
- D Separates audio waves from radio waves  
 Mengasingkan gelombang audio daripada gelombang radio

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