



JABATAN PELAJARAN NEGERI TERENGGANU

**PEPERIKSAAN PERCUBAAN (OTI 2)
SIJIL PELAJARAN MALAYSIA 2012**

SCIENCE

Paper 1

One Hour and Fifteen Minutes

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

- 1 *This question paper consists of 50 questions.*
- 2 *Answer all questions.*
- 3 *Answer each question by blackening the correct space on the 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.*

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AKRAM NEGERI TERENGGANU

Dengan Kerjasama:
MPSM NEGERI TERENGGANU

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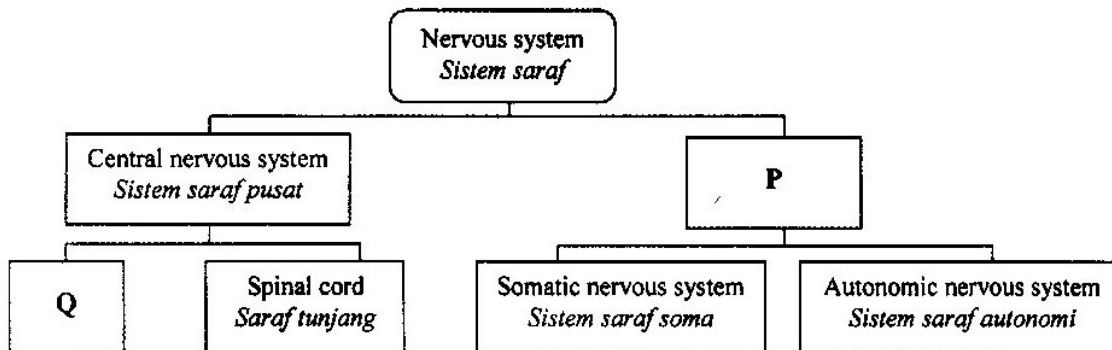
TERENGGANU NEGERI ANJUNG ILMU

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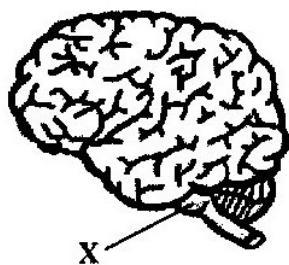
- 1 The chart shows the classification of human nervous system.
Carta menunjukkan pengkelasan sistem saraf manusia.



What is represented by P and Q?
Apakah yang diwakili oleh P dan Q?

	P	Q
A	Cranial nervous system <i>Sistem saraf kranium</i>	Heart <i>Jantung</i>
B	Spinal nervous system <i>Sistem saraf spina</i>	Brain <i>Otak</i>
C	Peripheral nervous system <i>Sistem saraf periferi</i>	Brain <i>Otak</i>
D	Voluntary nervous system <i>Sistem saraf terkawal</i>	Lungs <i>Peparu</i>

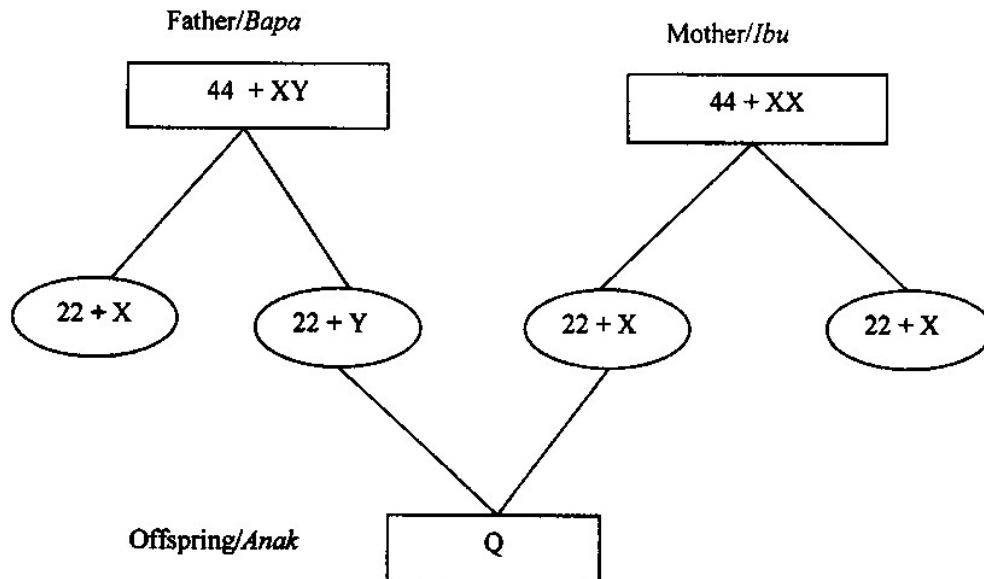
- 2 The diagram shows the structure of a human brain.
Rajah menunjukkan struktur otak manusia.



Which action is controlled by the part labelled X?
Tindakan manakah yang dikawal oleh bahagian berlabel X?

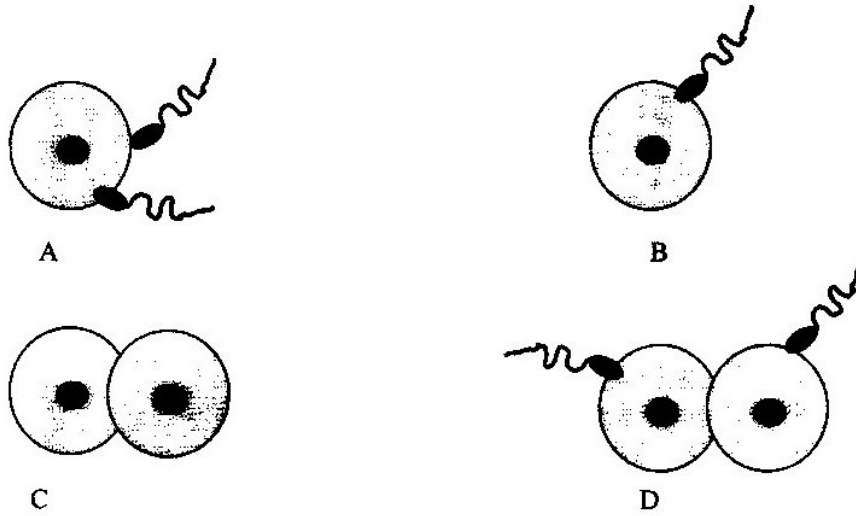
- A Menari
Dancing
- B Washing
Membasuh
- C Drawing
Melukis
- D Breathing
Bernafas

- 3 Which is the effect of deficiency of hormone secreted by pituitary gland?
Manakah kesan kekurangan hormon yang dirembeskan oleh kelenjar pituitari?
- A Goitre
Goiter
- B Diabetes
Kencing manis
- C Gigantism
Keergasian
- D Dwarfism
Kekerdilan
- 4 What is the thread like structure found in nucleus?
Apakah struktur seperti bebenang yang terdapat dalam nukleus?
- A Chromosome
Kromosom
- B Autosome
Autosom
- C Gene
Gen
- D Neurone
Neuron
- 5 The diagram shows the heredity scheme in human beings.
Rajah menunjukkan skema pewarisan pada manusia.



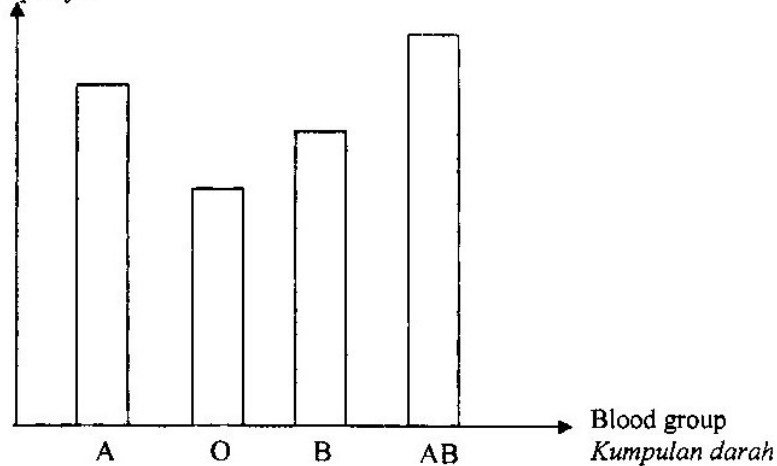
- What is the chromosome content of gamete Q?
Apakah kandungan kromosom gamet Q?
- A 44 + XX
- B 22 + X
- C 44 + XY
- D 22 + Y

- 6 Which fertilization between sperm and ovum will form siamese twins?
Persenyawaan yang manakah antara ovum dan sperma yang akan membentuk kembar siam?



- 7 The diagram shows a type of variation among students of 5 Cemerlang.
Rajah berikut menunjukkan sejenis variasi dalam kalangan pelajar 5 Cemerlang.

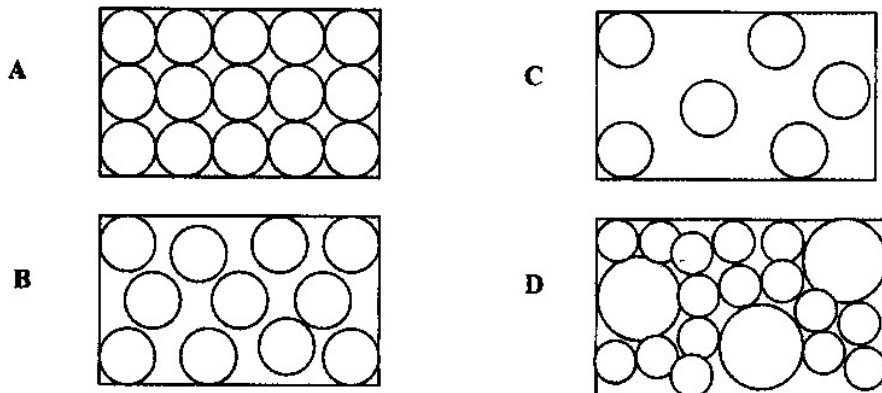
Number of pupils
Bilangan pelajar



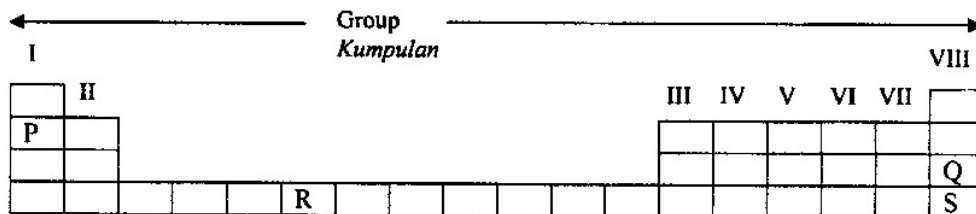
- Which characteristic shows a similar type of variation as above?
Ciri manakah yang menunjukkan variasi yang sama seperti di atas?

- A Height
Ketinggian
- B Skin colour
Warna kulit
- C Gender
Jantina
- D The length of sole
Panjang tapak kaki

- 8 Which of the following A, B, C and D represents liquid particles?
Antara A, B, C dan D yang manakah mewakili zarah cecair?



- 9 The diagram shows the location of four elements in the Periodic Table.
Rajah menunjukkan kedudukan empat unsur dalam Jadual Berkala.



Which elements have the smallest proton number?
Unsur manakah mempunyai nombor proton paling kecil?

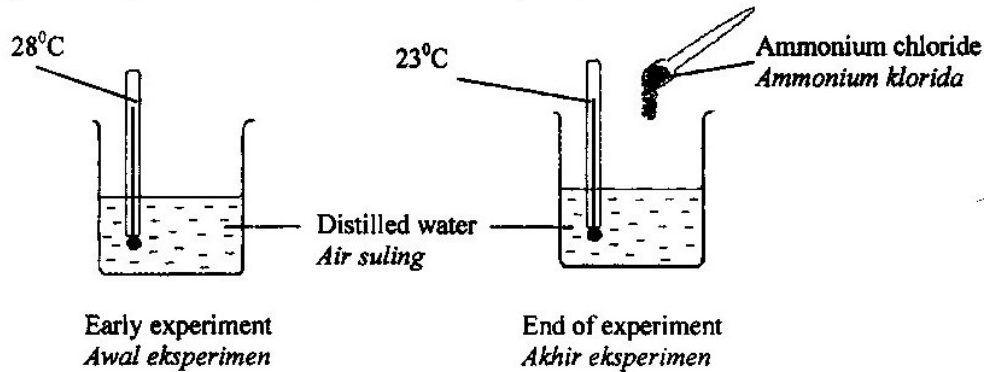
- A P C R
 B Q D S
- 10 The table shows the proton number and nucleon number of an atom.
Jadual menunjukkan nombor proton dan nombor nukleon bagi suatu atom.

Proton number <i>Nombor proton</i>	Nucleon number <i>Nombor nukleon</i>
11	25

What is the number of neutrons of the atom?
Apakah bilangan neutron bagi atom ini?

- A 11 C 25
 B 14 D 36
- 11 Which substance can be purified by crystallization?
Bahan yang manakah boleh dituliskan melalui penghabluran?
- A Common salt C Petroleum
Garam biasa Petroleum
 B Tin Ore D Ethanol
Bijih timah Etanol

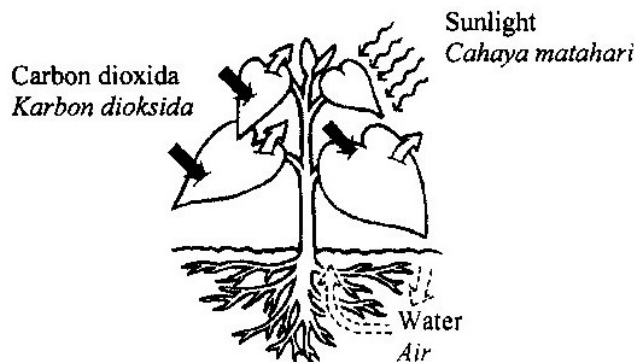
- 12 The diagram shows an experiment to study the heat change in a chemical reaction.
Rajah menunjukkan suatu eksperimen untuk mengkaji perubahan haba dalam satu tindak balas.



What type of reaction involved?

Apakah jenis tindakbalas yang berlaku?

- A Neutralization
Peneutralan
- B Exothermic
Eksotermik
- C Endothermic
Endotermik
- D Decomposition
Penguraian
- 13 The diagram shows a process involved in a green plant.
Rajah menunjukkan satu proses yang berlaku dalam tumbuhan hijau.

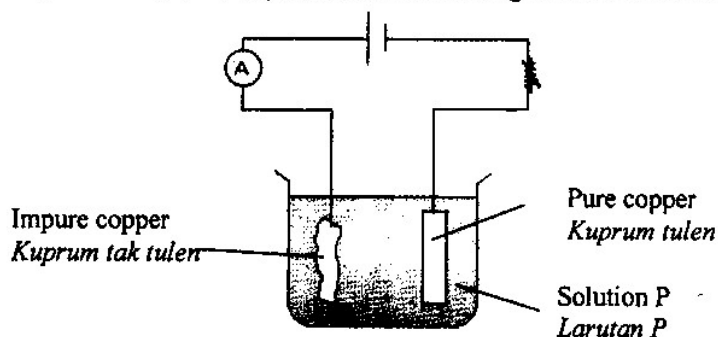


What substances are produced in the above process?

Apakah yang dihasilkan daripada proses di atas?

- A Glucose + oxygen
Glukosa + oksigen
- B Glucose + carbon dioxide
Glukosa + karbon dioksida
- C Chlorophyll + oxygen
Klorofil + oksigen
- D Chlorophyll + carbon dioxide
Klorofil + karbon dioksida

- 14 The diagram shows how electrolysis is used to purify copper.
Rajah menunjukkan bagaimana elektrolisis digunakan untuk menuliskan kuprum.



What is solution P?

Apakah larutan P?

- A Sodium chloride
Natrium klorida
- B Silver chloride
Argentum klorida
- C Sodium hydroxide
Natrium hidroksida
- D Copper sulphate
Kuprum sulfat
- 15 The table shows the advantages and disadvantages of a type of cell.
Jadual menunjukkan kelebihan dan kekurangan sejenis sel.

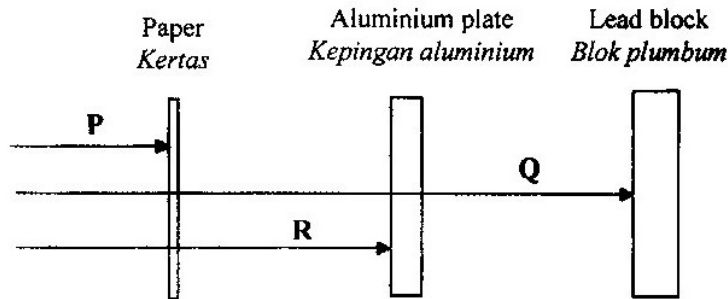
Advantages / Kebaikan	Disadvantages / Kekurangan
Long lasting <i>Tahan lama</i>	Big <i>Besar</i>
Rechargeable <i>Boleh dicas semula</i>	Heavy <i>Berat</i>
Produces higher and more stable voltage <i>Menghasilkan voltan yang lebih tinggi dan stabil</i>	The concentration of the acid must be maintained <i>Kepekatan asid perlu sentiasa tetap.</i>

What is the cell?

Apakah sel itu?

- A Nickle-cadmium battery
Bateri nikel kadmium
- B Lead-acid accumulator
Akumulator asid plumbum
- C Dry cell
Sel kering
- D Mercury oxide battery
Sel merkuri

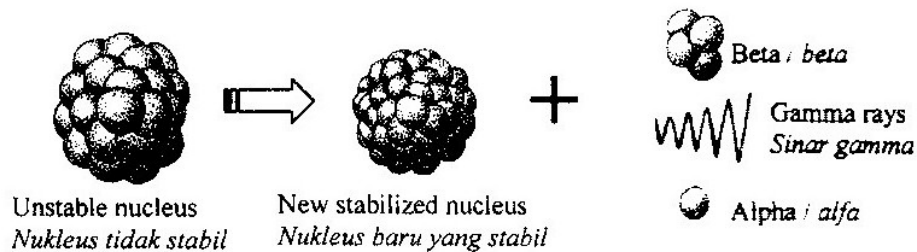
- 16 The diagram shows the penetrating power of radiations P, Q and R.
Rajah menunjukkan kuasa penembusan bagi sinar P, Q dan R.



What are P, Q and R?
Apakah P, Q dan R?

	P	Q	R
A	Alpha ray <i>Sinar alfa</i>	Beta ray <i>Sinar beta</i>	Gamma ray <i>Sinar gamma</i>
B	Beta ray <i>Sinar beta</i>	Alpha ray <i>Sinar alfa</i>	Gamma ray <i>Sinar gamma</i>
C	Gamma ray <i>Sinar gamma</i>	Beta ray <i>Sinar beta</i>	Alpha ray <i>Sinar alfa</i>
D	Alpha ray <i>Sinar alfa</i>	Gamma ray <i>Sinar gamma</i>	Beta ray <i>Sinar beta</i>

- 17 The diagram shows an unstable nucleus breaks up and emits alpha, beta and gamma rays.
Rajah menunjukkan nukleus yang tidak stabil pecah dan memancarkan sinar alfa beta dan gamma.

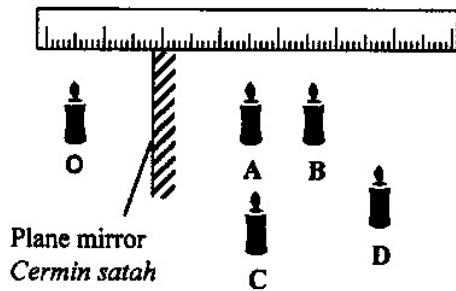


Which process is involved?
Proses manakah yang terlibat?

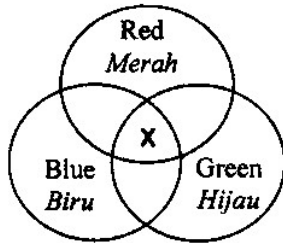
- A Radioisotope
Radioisotop
- B Radioactive decay
Pereputan radioaktif
- C Nuclear fission
Pembelahan nukleus
- D Nuclear fusion
Pelakuran nukleus

- 18 The diagram shows candle **O** in front of a plane mirror. At which points **A**, **B**, **C** or **D** will the image be formed?

*Rajah menunjukkan sebatang lilin **O** berada di hadapan sebuah cermin satah. Pada titik manakah **A**, **B**, **C** atau **D** imej akan terbentuk?*

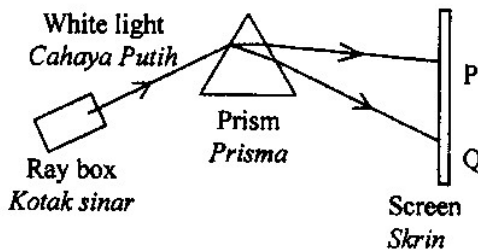


- 19 The diagram shows the overlapping of three coloured light spot.
Rajah menunjukkan pertindihan tiga tompok cahaya berwarna.



What is the colour of light **X**?
*Apakah warna cahaya **X**?*

- A Black
Hitam
- B White
Putih
- C Yellow
Kuning
- D Magenta
Magenta
- 20 The diagram shows the dispersion of white light.
Rajah menunjukkan penyebaran cahaya putih.



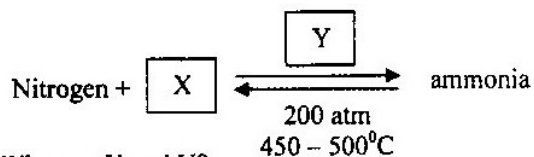
What colours of light **P** and **Q** formed on the screen?
*Apakah warna cahaya **P** dan **Q** yang terbentuk pada skrin?*

	P	Q
A	Red <i>Merah</i>	Violet <i>Ungu</i>
B	Red <i>Merah</i>	Blue <i>Biru</i>
C	Blue <i>Biru</i>	Orange <i>Jingga</i>
D	Violet <i>Ungu</i>	Red <i>Merah</i>

- 21 What is the phenomenon that form blue sky and red sunset ?
Apakah fenomena yang membentuk langit biru dan merah senja?
- A Dispersion of light
Penyebaran cahaya
- C Refraction of light
Pembiasan cahaya
- B Reflection of light
Pantulan cahaya
- D Scattering of light
Penyerakan cahaya
- 22 Which pairs of alloy and its elements is correctly matched?
Pasangan aloi dan unsurnya yang manakah dipadankan dengan betul?

	Alloy <i>Aloi</i>	Elements <i>Unsur</i>
A	Brass <i>Loyang</i>	Copper + Tin <i>Kuprum + Timah</i>
B	Steel <i>Keluli</i>	Iron + Carbon <i>Besi + Karbon</i>
C	Pewter <i>Piuter</i>	Tin + Zinc <i>Timah + Zink</i>
D	Duralumin <i>Duralumin</i>	Aluminium + Magnesium <i>Aluminium + Magnesium</i>

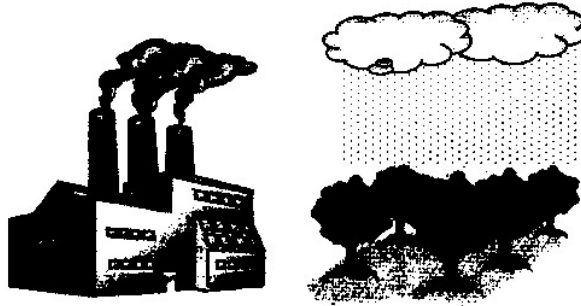
- 23 The information shows a word equation of Haber process.
Maklumat menunjukkan persamaan perkataan bagi proses Haber.



What are X and Y?
Apakah X dan Y?

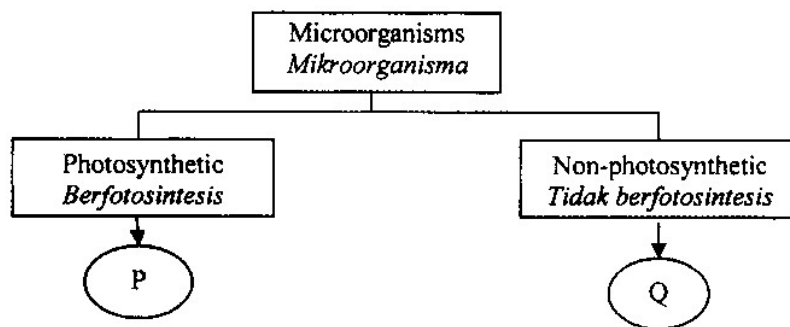
	X	Y
A	Oxygen <i>Oksigen</i>	Sulphuric acid <i>Asid Sulfurik</i>
B	Carbon dioxide <i>Karbon dioksida</i>	Copper filling <i>Serbuk kuprum</i>
C	Hydrogen <i>Hidrogen</i>	Iron filling <i>Serbuk besi</i>
D	Sulphur dioxide <i>Sulfur dioksida</i>	Formic acid <i>Asid formik</i>

- 24 The diagram shows an industrial activity that causes environmental pollution.
Rajah menunjukkan suatu aktiviti yang menyebabkan pencemaran alam sekitar.



What is the phenomenon?
Apakah fenomena tersebut?

- A Smog
Asap
 B Acid rain
Hujan asid
 C Thinning of ozone layer
Penipisan lapisan ozon
 D Greenhouse effect
Kesan rumah hijau
- 25 The diagram shows the classifying of microorganisms
Rajah menunjukkan pengelasan mikroorganisma



What is microorganisms P?
Apakah mikroorganisma P?

- A Algae
Alga
 B Fungi
Kulat
 C Virus
Virus
 D Bacteria
Bakteria

- 26 The diagram shows a herbivore animal.
Rajah menunjukkan seekor haiwan herbivor.



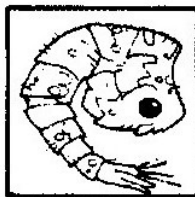
What is the microorganism that help in digestion of this animal?
Apakah mikroorganisma yang membantu dalam pencernaan haiwan ini?

- A Virus
Virus
B Algae
Alga
C Protozoa
Protozoa
D Fungi
Kulat
- 27 The diagram shows a microorganism.
Rajah menunjukkan sejenis mikroorganisma.

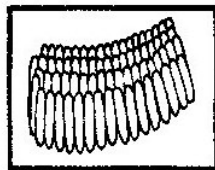


What is the method of reproduction for this microorganism?
Apakah cara pembiakan bagi mikroorganisma ini?

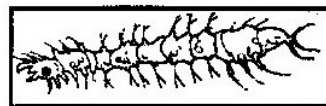
- A Spore formation
Pembentukan spora
B Budding
Pertunasan
C Rejuvenation
Penjanaan semula
D Conjugation
Konjugasi
- 28 The diagram shows stages in life cycle of a vector.
Rajah menunjukkan peringkat-peringkat dalam kitar hidup bagi sejenis vektor.



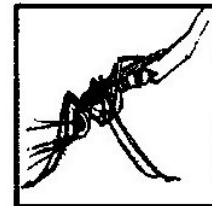
R



S



T



U

Arrange the stages of life cycle of this vector.

Susunkan peringkat-peringkat kitar hidup bagi vektor ini.

- A U, R, S, T
- B U, T, R, S
- C U, S, R, T
- D U, S, T, R

- 29 The diagram shows the effect of lack of a nutrient.
Rajah menunjukkan kesan kekurangan satu nutrien.



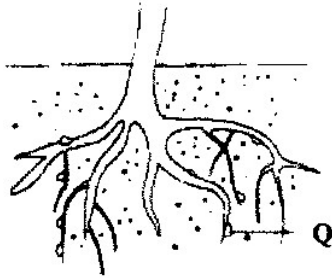
What is the nutrient?

Apakah nutrien tersebut?

- A Vitamin B
Vitamin B
 - B Iodine
Iodin
 - C Protein
Protein
 - D Calcium
Kalsium
- 30 Which of the following dietary imbalance and health problem is correctly matched?
Antara ketidakseimbangan diet dan masalah kesihatan berikut, yang manakah dipadankan dengan betul?

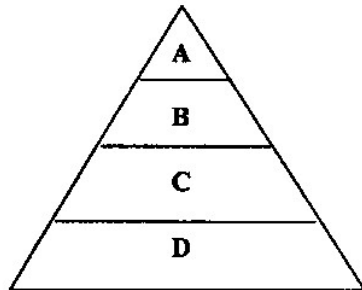
	Dietary imbalance <i>Ketidakeimbangan diet</i>	Health problem <i>Masalah kesihatan</i>
A	Lack of iron <i>Kekurangan besi</i>	Goitre <i>Goiter</i>
B	Lack of protein <i>Kekurangan protein</i>	Obesity <i>Kegendutan</i>
C	Lack of vitamin C <i>Kekurangan vitamin C</i>	Scurvy <i>Skurvi</i>
D	Excessive saturated fats <i>Berlebihan lemak tepu</i>	Anorexia nervosa <i>Anoreksia nervosa</i>

- 31 The diagram shows the roots of a leguminous plant.
Rajah menunjukkan akar pokok kekacang.

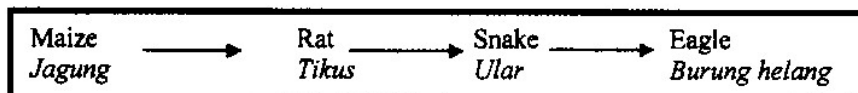


What type of bacteria is found in Q?
Apakah jenis bakteria yang terdapat dalam Q?

- A Saprophytic bacteria
Bakteria saprofit
- B Nitrifying bacteria
Bakteria penitritan
- C Denitrifying bacteria
Bakteria pendenitritan
- D Nitrogen-fixing bacteria
Bakteria pengikat nitrogen
- 32 The diagram shows a pyramid number.
Which of the levels labelled A, B, C or D represents tertiary consumer?
Rajah menunjukkan satu piramid nombor.
Manakah antara aras yang dilabelkan A, B, C atau D yang mewakili pengguna tertier?



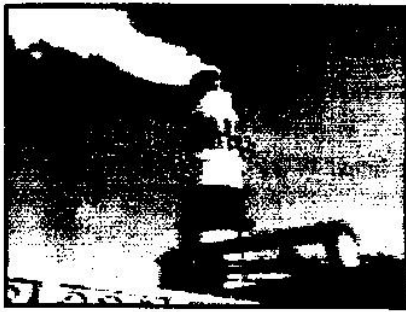
- 33 The diagram shows a food chain.
Rajah menunjukkan satu rantai makanan.



What will happen to the maize yield and eagle population if the rat is eliminated?
Apakah kesan kepada penghasilan jagung dan populasi burung helang jika tikus dihapuskan?

	Maize yield <i>Penghasilan jagung</i>	Eagle population <i>Populasi burung helang</i>
A	Increase <i>Bertambah</i>	Increase <i>Bertambah</i>
B	Decrease <i>Berkurang</i>	Increase <i>Bertambah</i>
C	Increase <i>Bertambah</i>	Decrease <i>Berkurang</i>
D	Decrease <i>Berkurang</i>	Decrease <i>Berkurang</i>

- 34 The diagram shows a type of pollution from a factory.
Rajah menunjukkan sejenis pencemaran dari sebuah kilang.



- What is the best step to control the population?
Apakah langkah terbaik untuk mengawal pencemaran itu?
- A Cover the chimney.
Tutup cerobong asap.
- B Shorten the chimney.
Rendahkan cerobong asap.
- C Add more chimney.
Tambahkan lebih banyak cerobong asap.
- D Fix air filter on the chimney.
Pasang penapis udara pada cerobong asap.

- 35 The following products are made from substance X.
Bahan-bahan berikut dibuat daripada bahan X.

- | |
|---|
| <ul style="list-style-type: none"> • Soap
<i>Sabun</i> • Candle
<i>Lilin</i> • Hair conditioner
<i>Perapi rambut</i> |
|---|

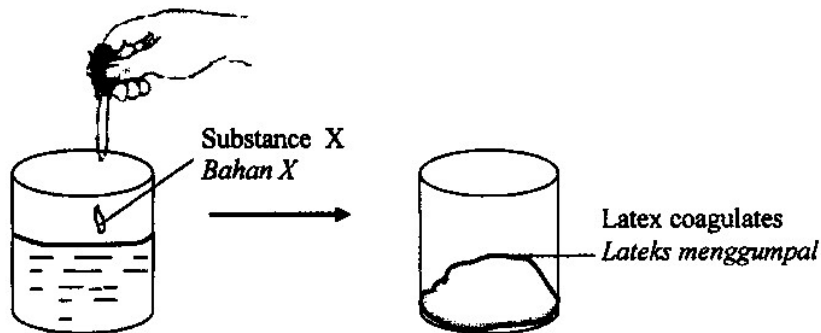
What is X?
Apakah X?

- A Alcohol
Alkohol
- B Palm oil
Minyak sawit
- C Petrol
Petrol
- D Kerosene
Kerosin

36 Which oil is rich in saturated fat ?
Minyak manakah kaya dengan lemak tepu ?

- A Ghee
Minyak sapi
- B Palm oil
Minyak sawit
- C Olive oil
Minyak zaiton
- D Corn oil
Minyak jagung

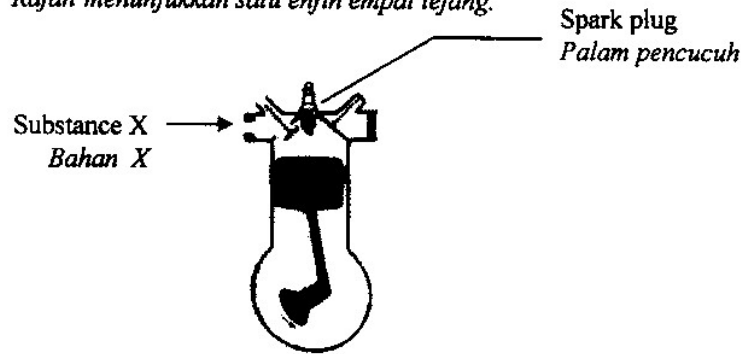
37 The diagram shows the effect of substance X on latex.
Rajah menunjukkan kesan bahan X ke atas lateks.



What is substance X?
Apakah bahan X?

- A Ethanoic acid
Asid etanoik
- B Ammonium solution
Larutan ammonia
- C Distilled water
Air suling
- D Sodium chloride
Natrium klorida

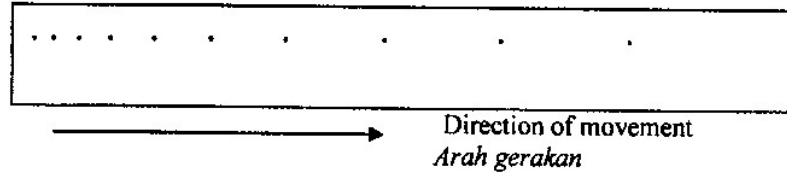
- 38 The diagram shows a four-stroke engine.
Rajah menunjukkan satu enjin empat lejang.



What is substance X?
Apakah bahan X?

- A Diesel
Diesel
- B Petrol
Petrol
- C Petrol and air
Petrol dan udara
- D Diesel and air
Diesel dan udara

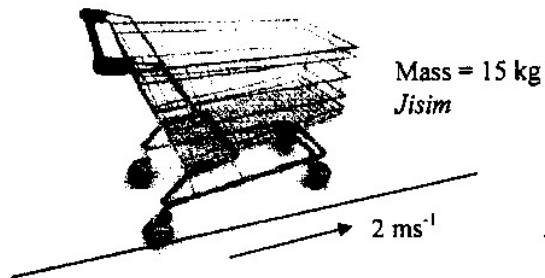
- 39 The diagram shows a ticker tape section for moving trolley.
Rajah menunjukkan keratan pita detik bagi gerakan sebuah trolri.



What is the type of motion of the trolley?
Apakah jenis gerakan trolri itu?

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

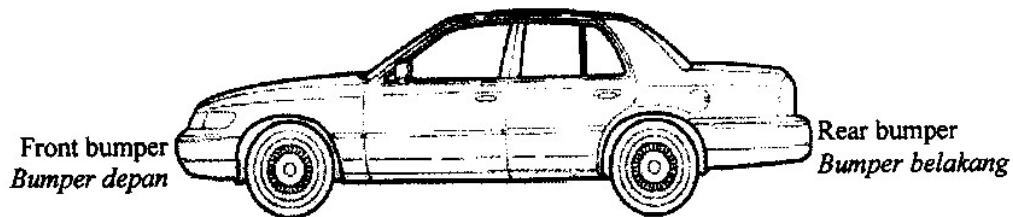
- 40 The diagram shows a trolley moving at a velocity of 2 ms^{-1} .
Rajah menunjukkan satu trolri yang bergerak pada halaju 2 ms^{-1} .



What is the momentum of the trolley?
Apakah momentum trolri itu?

$$\left(\begin{array}{l} \text{Momentum} = \text{Mass} \times \text{Velocity} \\ \text{Momentum} = \text{Jisim} \times \text{Halaju} \end{array} \right)$$

- A 7.5 kg ms^{-1}
 B 13.0 kg ms^{-1}
 C 17.0 kg ms^{-1}
 D 30.0 kg ms^{-1}
- 41 The diagram shows the design of a car which has safety features.
Rajah menunjukkan reka bentuk kereta yang mempunyai ciri-ciri keselamatan.



What is the function of the rear and front bumpers?
Apakah fungsi bumper belakang dan hadapan?

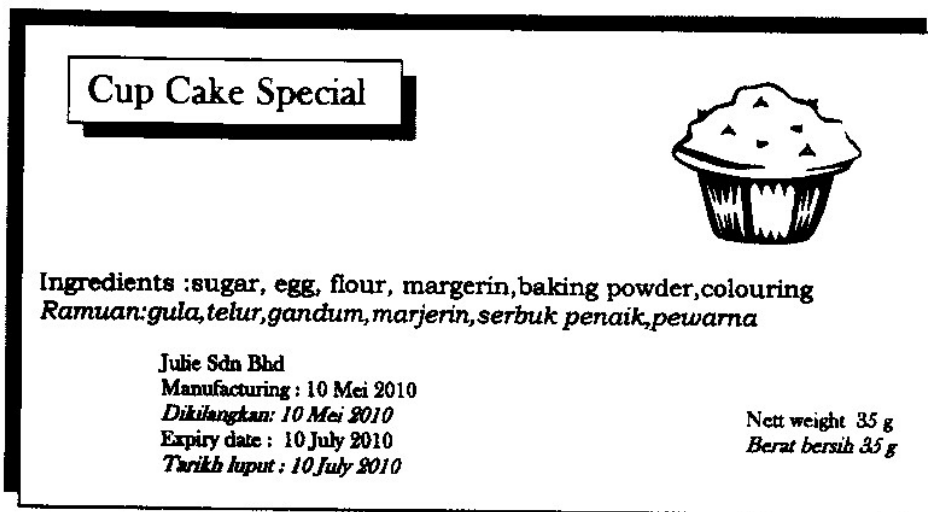
- A As accessories to make up the appearance of the car
Sebagai aksesori untuk meningkatkan rekabentuk kereta
 B To increase the speed of the car
Menambah kelajuan kereta
 C To reduce air friction when the car speed up
Mengurangkan geseran udara apabila kereta memecut
 D To lengthen the collision time during a crash
Menambah masa perlanggaran semasa kemalangan

- 42 The diagram shows an example of a processed food.
Rajah menunjukkan satu contoh bahan makanan yang diproses.



What is the method of processing used?
Apakah kaedah pemprosesan yang digunakan?

- A Cooling
Pendinginan
 B Pasteurization
Pempasteuran
 C Freezing
Pembekuan
 D Irradiation
Penyinaran
- 43 The diagram shows a food label.
Rajah menunjukkan satu label bungkusan makanan.



Which information should be on the label according to the Food Act 1983 and Food Regulation 1985?

- Maklumat manakah yang sepatutnya terdapat pada label tersebut mengikut Akta Makanan 1983 dan Peraturan Makanan 1985?*

- A 'Halal' label
Tanda halal
- B Manufacturer address
Alamat pengeluar
- C Calorific value
Nilai kalori
- D Price
Harga
- 44 A farmer discovered that his land was becoming less fertile. Which is the best action to overcome the problem?
Seorang petani mendapati tanahnya semakin tidak subur. Tindakan manakah yang paling sesuai untuk mengatasi masalah tersebut?
- A Use terrace cropping
Guna tanaman teres
- B Use selective breeding
Guna pembiakbakaan terpilih
- C Use modern agricultural tools
Guna peralatan pertanian moden
- D Use crop rotation
Guna tanaman bergilir
- 45 Which pairs of monomer and polymer is correctly matched?
Manakah pasangan monomer dan polimer yang dipadankan dengan betul?

	Monomer <i>Monomer</i>	Polymer <i>Polimer</i>
A	Protein <i>Protein</i>	Amino acid <i>Asid amino</i>
B	Isoprene <i>Isoprena</i>	Natural rubber <i>Getah asli</i>
C	Polythene <i>Politena</i>	Ethene <i>Etena</i>
D	Carbohydrate <i>Karbohidrat</i>	Glucose <i>Glukosa</i>

- 46 The diagram shows the structure of a plastic.
Rajah menunjukkan struktur suatu plastik.

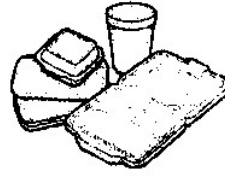


- Which plastic has the above structure?
Manakah plastik yang mempunyai struktur di atas?
- A Perspex
Perspeks
- B Polystyrene
Polistirena
- C Bakelite
Bakelit
- D Polyvinyl chloride
Polivinil klorida

- 47 The diagram shows the examples of product made from substance X.
Rajah menunjukkan contoh-contoh produk yang dihasilkan daripada bahan X.



Polythene bottle
Botol politena



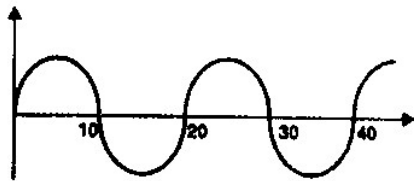
Polystyrene container
Bekas polistirena

What is substance X?

Apakah bahan X?

- A Natural rubber
Getah asli
 B Thermoset
Termoset
 C Thermoplastics
Termoplastik
 D Synthetic rubber
Getah sintetik
- 48 The diagram shows a wave.
Rajah menunjukkan satu gelombang.

Displacement / cm
Sesaran / cm



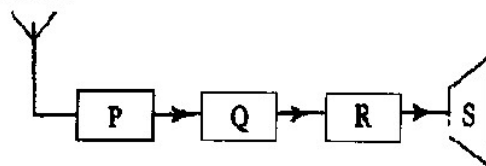
Distance / cm
Jarak / cm

What is the wavelength of the wave?

Apakah panjang gelombang bagi gelombang tersebut?

- A 10 cm
 B 20 cm
 C 30 cm
 D 40 cm
- 49 The diagram shows the radio receiver system.
Rajah menunjukkan sistem penerima radio.

Aerial
Aerial



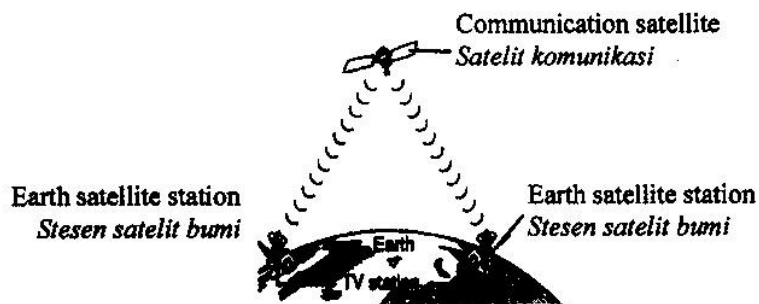
Which part separates the audio frequency signals from radio waves?

Bahagian manakah mengasingkan frekuensi audio daripada gelombang radio?

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

- 50 The diagram shows how information is transmitted between earth satellite stations and a communication satellite.

Rajah menunjukkan bagaimana maklumat dipancarkan antara stesen satelit bumi dan satelit komunikasi



What type of wave is used in this communication?

Apakah jenis gelombang yang digunakan dalam komunikasi ini?

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

END OF QUESTION PAPER
KERTAS SOALAN TAMAT
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SULIT

Marking scheme / 1511/ PERCUBAAN 2012

PAPER 1

1	C	11	A	21	D	31	D	41	D
2	D	12	C	22	B	32	A	42	B
3	D	13	A	23	C	33	C	43	B
4	A	14	D	24	B	34	D	44	D
5	C	15	B	25	A	35	B	45	B
6	B	16	D	26	C	36	A	46	C
7	C	17	B	27	D	37	A	47	C
8	B	18	A	28	D	38	C	48	B
9	A	19	B	29	C	39	B	49	B
10	B	20	A	30	C	40	D	50	A

Total mark for Paper 1 : 50 marks

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