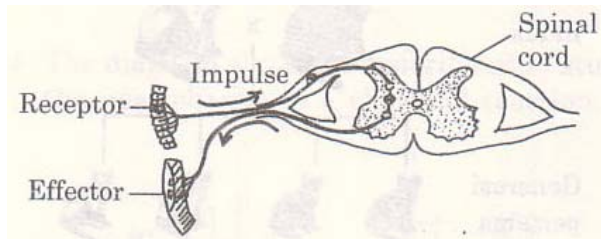
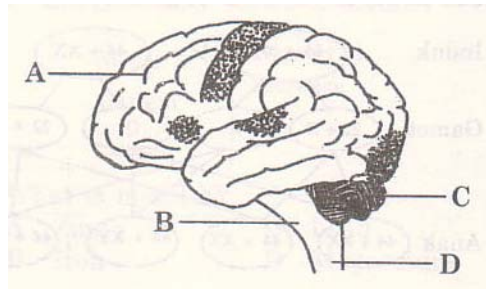


1. The diagram shows an impulse pathway.
Rajah menunjukkan satu lintasan impuls.



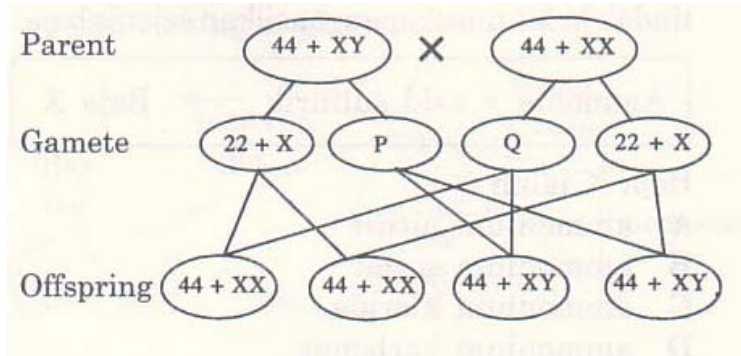
Which of the following actions involves the impulse pathway?
Antara tindakan berikut yang manakah melibatkan lintasan impuls itu?

- A Swallowing food (*Menelan makanan*)
B Dancing with music (*Menari dengan iringan muzik*)
C Walking on a tight rope (*Berjalan di atas tali yang diregangkan*)
D Blinking of the eyes to protect from dust (*Mengedip mata untuk mencegah kemasukan habuk*)
2. The diagram shows the structure of a human brain. Which part of the brain controls involuntary actions?
Rajah menunjukkan struktur otak manusia. Bahagian otak yang manakah mengawal tindakan luar kawal?



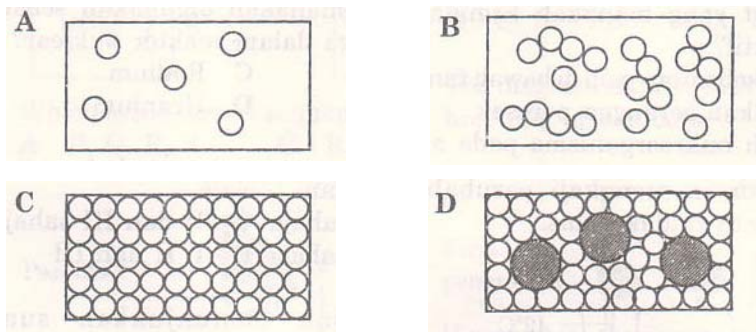
3. Deficiency of which element causes the thyroid gland to swell?
Kekurangan unsur yang manakah menyebabkan kelenjar tiroid membesar?
- A Calcium (*Kalsium*) B Sodium (*Natrium*)
C Iodine (*Iodin*) D Iron (*Besi*)
4. Salleh is walking on a piece of plank (*Salleh berjalan di atas sekeping papan*)
What type of action is this? (*Apakah jenis tindakan itu?*)
- A A reflex action (*Tindakan refleks*)
B A capillary action (*Tindakan kapilari*)
C A voluntary action (*Tindakan terkawal*)
D An involuntary action (*Tindakan luar kawal*)

7. The diagram shows how the sex of offspring is determined in humans.
Rajah menunjukkan bagaimana seks anak ditentukan bagi manusia



Which chromosomes are found in gametes P and Q?
Kromosom yang manakah terdapat dalam P dan Q?

- | | <u>P</u> | <u>Q</u> |
|---|----------|----------|
| A | 22 + X | 22 + Y |
| B | 22 + Y | 22 + X |
| C | 44 + X | 44 + Y |
| D | 44 + Y | 44 + X |
8. Which of the following is an example of a discontinuous variation?
Antara berikut yang manakah contoh variasi tak selanjar?
- | | | | |
|---|------------------------------------|---|---------------------------------------|
| A | Height (<i>Ketinggian</i>) | B | Skin colour (<i>Warna kulit</i>) |
| C | Body weight (<i>Berat badan</i>) | D | Blood group (<i>Kumpulan darah</i>) |
9. Which of the following A, B, C or D represents liquid particles?
Antara A, B, C atau D yang manakah mewakili zarah cecair?



10. Pure water can be produced from polluted water by
Air tulen boleh dihasilkan daripada air yang tercemar dengan cara

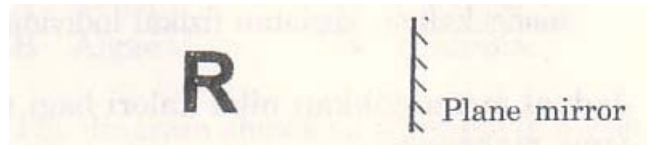
- | | | | |
|---|-------------------------------------|---|---|
| A | evaporation (<i>penyejatan</i>) | B | boiling (<i>pendidihan</i>) |
| C | distillation (<i>penyulingan</i>) | D | crystallization (<i>penghabluran</i>) |

17. Which of the following are the uses of radioactive substances?
Antara berikut yang manakah kegunaan bahan radioaktif?

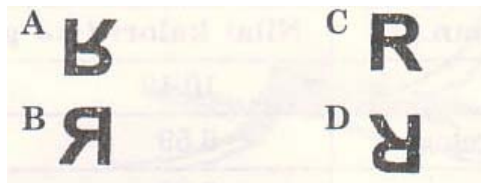
- I To detect leaking of underground pipes
(Untuk mengesan kebocoran paip di bawah tanah)
- II To sterilize pests
(Untuk memandulkan serangga perosak)
- III To kill microorganisms on surgical instruments
(Untuk membunuh mikroorganisma pada alat pembedahan)

- 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)

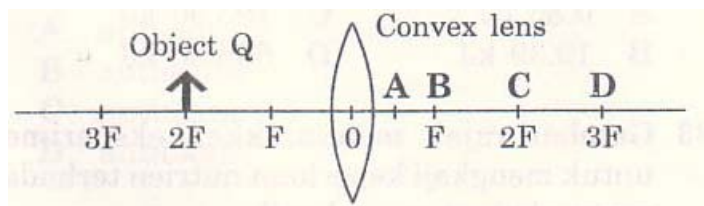
18. The diagram shows an object which is placed in front of a plane mirror.
Rajah menunjukkan kedudukan satu objek yang diletakkan di hadapan cermin satah.



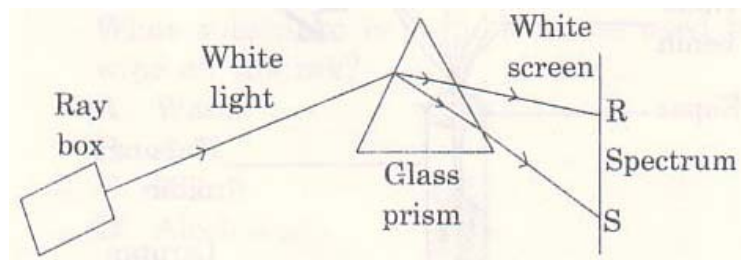
Which image appears in the plane mirror?
Imej yang manakah kelihatan di atas cermin satah itu?



19. The diagram shows the position of an object Q in front of a convex lens. At which of the following positions A, B, C or D is the image of object Q formed?
Rajah menunjukkan kedudukan objek Q di hadapan kanta cembung. Antara kedudukan A, B, C atau D di manakah imej bagi objek Q terbentuk?



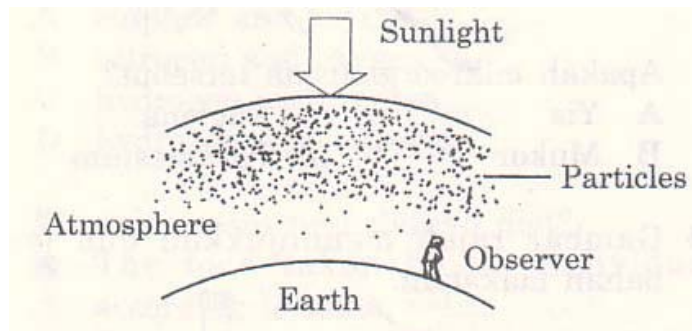
20. The diagram shows the dispersion of white light using a glass prism.
Rajah menunjukkan penyebaran cahaya putih menggunakan prisma kaca.



What are the colours at R and S? (*Apakah warna pada R dan S?*)

	<u>R</u>	<u>S</u>
A	Violet (<i>Ungu</i>)	Red (<i>Merah</i>)
B	Red (<i>Merah</i>)	Violet (<i>Ungu</i>)
C	Red (<i>Merah</i>)	Blue (<i>Biru</i>)
D	Orange (<i>Jingga</i>)	Violet (<i>Ungu</i>)

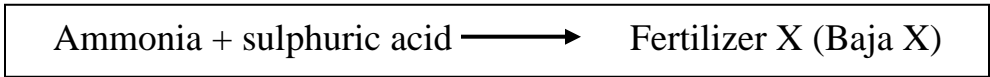
21. The diagram shows an observer looking at the sky at noon.
Rajah menunjukkan seorang memerhati langit pada waktu tengahari.



Which colour of the sunlight dispersed the most?
Apakah warna cahaya matahari yang paling banyak diserakkan?

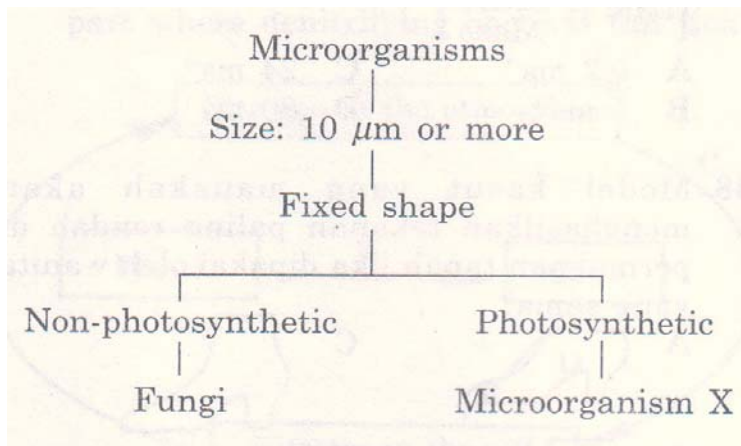
- | | | | |
|---|------------------------|---|--------------------------|
| A | Blue (<i>Biru</i>) | B | White (<i>Putih</i>) |
| C | Green (<i>Hijau</i>) | D | Yellow (<i>Kuning</i>) |
22. Which of the following processes increase the hardness of a metal?
Antara proses berikut yang manakah dapat menambahkan kekerasan sesuatu logam?
- | | | | |
|---|-----------------------------------|---|--|
| A | Purification (<i>Penulenan</i>) | B | Alloying (<i>Pengloian</i>) |
| C | Plating (<i>Penyaduran</i>) | D | Polymerization (<i>Pempolimeran</i>) |

23. The word equation below shows the reaction to produce a type of fertilizer.
Persamaan perkataan di bawah menunjukkan tindak balas untuk menghasilkan sejenis baja.



Fertilizer X is (*Baja X ialah*)

- | | |
|---------------------|----------------------|
| A ammonium nitrate | B ammonium carbonate |
| C ammonium sulphate | D ammonium chloride |
24. The following information shows the classification of microorganisms
Maklumat berikut menunjukkan pengelasan mikroorganisma.



What is microorganism X? (*Apakah mikroorganisma X?*)

- | | |
|------------|------------|
| A Algae | B Virus |
| C Bacteria | D Protozoa |
25. What is the optimum temperature for the growth of bacteria that can cause diseases?
Apakah suhu optimum untuk pertumbuhan bacteria yang boleh menyebabkan penyakit?
- | | |
|---------|---------|
| A 0 °C | B 5 °C |
| C 37 °C | D 60 °C |
26. The microorganism which helps the digestion of cellulose in herbivores is
Mikroorganisma yang membantu proses pencernaan selulosa bagi herbivor ialah
- | | |
|---------|------------|
| A Algae | B Fungi |
| C Virus | D Bacteria |

31. A plant is known as a producers because it can
Tumbuhan dikenali sebagai pengeluar kerana ia boleh
- A use oxygen (*menggunakan oksigen*)
 - B carry out photosynthesis (*menjalankan fotosintesis*)
 - C produce carbon dioxide (*mengeluarkan karbon dioksida*)
 - D absorb nutrients from the soil (*menyerap nutrien dari tanah*)
32. Which of the following gases contributes the most to the green house effect?
Antara gas berikut, yang manakah merupakan penyumbang utama kepada kesan rumah hijau?
- A Sulphur dioxide (*Sulfur dioksida*)
 - B Carbon dioxide (*Karbon dioksida*)
 - C Nitrogen dioxide (*Nitrogen dioksida*)
 - D Carbon monoxide (*Karbon monoksida*)
33. What is the most effective method to control pollution caused by plastic waste materials?
Apakah kaedah paling berkesan untuk mengawal pencemaran akibat daripada bahan buangan plastik?
- A Recycle (*Kitar semula*)
 - B Bury in the soil (*Tanam dalam tanah*)
 - C Throw into the sea (*Buang ke dalam laut*)
 - D Burn in open area (*Bakar di kawasan lapang*)
34. What is the most suitable method to maintain the fertility of agriculture land?
Apakah kaedah yang paling sesuai untuk mengekalkan kesuburan tanah pertanian?
- A Use pesticides (*Menggunakan pestisid*)
 - B Plant cover crops (*Menanam tanaman penutup bumi*)
 - C Use contour planting (*Mananam tanaman mengikut kontur*)
 - D Practise alternate cropping (*Mengamalkan tanaman giliran*)
35. Which of the following can maximise the production of food?
Antara berikut yang manakah boleh memaksimumkan pengeluaran makanan?
- A Plant cover crops (*Menanam tanaman penutup bumi*)
 - B Use terrace planting (*Mengamalkan tanaman berteres*)
 - C Use modern technology (*Menggunakan teknologi moden*)
 - D Practise alternate cropping (*Mengamalkan tanaman giliran*)

36. The following word equation shows a chemical process.
Persamaan perkataan berikut menunjukkan suatu proses kimia.



What is X? (*Apakah X?*)

- | | | | |
|---|---------|---|---------|
| A | Urea | B | Ester |
| C | Ethanol | D | Ammonia |
37. The excessive intake of saturated fats can harm our health because they
Pengambilan lemak tepu berlebihan boleh menjejaskan kesihatan kerana ianya
- A do not dissolve in water (*tidak larut dalam air*)
 - B are solids at room temperature (*pepejal pada suhu bilik*)
 - C cause high cholesterol levels (*menyebabkan aras kolesterol yang tinggi*)
 - D act as solvents for certain vitamins (*bertindak sebagai pelarut vitamin tertentu*)
38. The following information shows the steps in the extraction of palm oil.
Maklumat berikut menunjukkan langkah dalam proses pengekstrakkan minyak kelapa sawit.

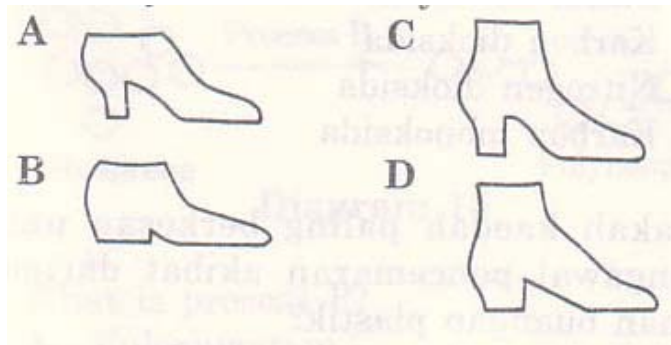
P : The palm oil is heated with activated carbon
Q : The oil palm fruit is crushed by mechanical digestion
R : The oil palm fruit is sterilised using steam
S : The oil palm fruit is squeezed using hydraulic pressure

Which is the correct sequence in the process?
Urutan yang manakah betul dalam proses itu?

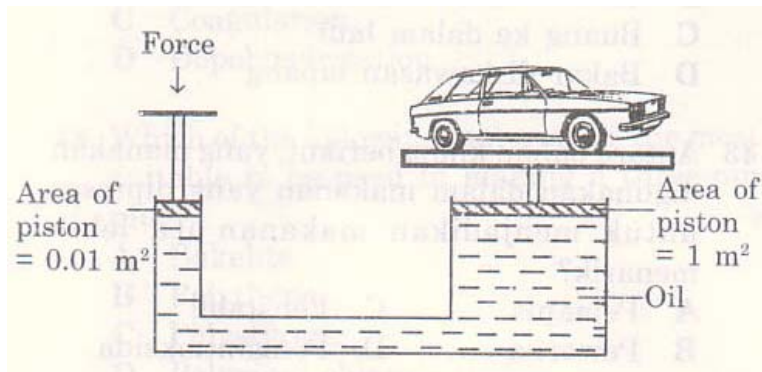
- | | | | |
|---|------------|---|------------|
| A | P, Q, S, R | B | Q, R, P, S |
| C | R, S, P, Q | D | R, Q, S, P |

42. Which model of shoe exerts the least pressure on the surface of the ground when worn by the same lady?

Model kasut yang manakah akan menghasilkan tekanan paling rendah di permukaan tanah jika dipakai oleh wanita yang sama?



43. The diagram shows a hydraulic system.
Rajah menunjukkan satu sistem hidraulik.



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

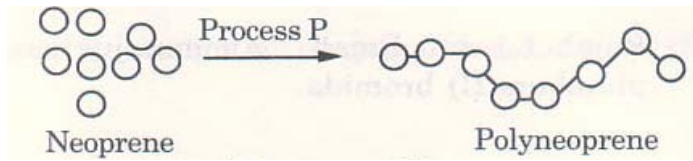
Berapakah daya yang diperlukan untuk mengangkat kereta yang mempunyai berat 10 000 N?

Pressure (Tekanan) = Force (Daya) / Surface area (Luas permukaan)

- | | | | |
|---|----------|---|-----------|
| A | 100 N | B | 1 000 N |
| C | 10 000 N | D | 100 000 N |
44. Which of the following chemical substances is used in processed food to make the food more attractive?
Antara bahan kimia berikut yang manakah digunakan dalam makanan yang diproses untuk menjadikan makanan itu lebih menarik?

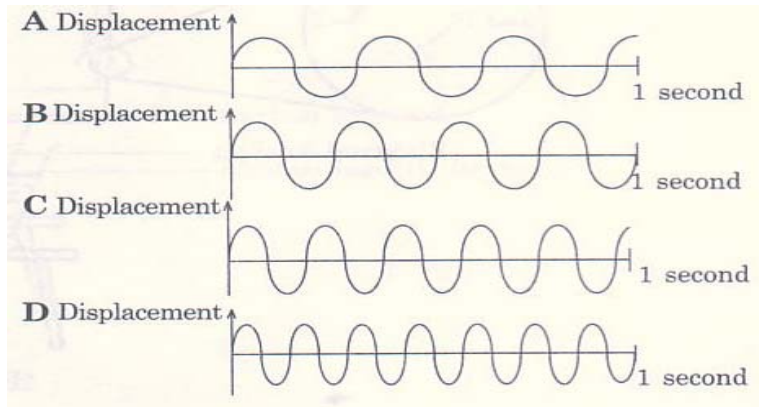
- | | | | |
|---|------------------------|---|------------------------------|
| A | Sweetener (Pemanis) | B | Antioxidant (Pengantioksida) |
| C | Stabilizer (Penstabil) | D | Colouring (Pewarna) |

- 48 The diagram below shows a process in the production of a synthetic material.
Rajah di bawah menunjukkan suatu proses penghasilan bahan sintetik.



What is process P? (*Apakah proses P?*)

- A Vulcanization (*Pemvulkanan*) B Polymerization (*Pempolimeran*)
 C Coagulation (*Penggumpalan*) D Depolymerization (*Penyahpolimeran*)
- 49 Which propagation wave has the highest frequency?
Perambatan gelombang yang manakah mempunyai frekuensi paling tinggi?



- 50 Which of the following is true about communication satellites?
Antara berikut yang manakah benar tentang satelit komunikasi?
- A Located outside the Earth's orbit (*Terletak di luar orbit Bumi*)
 B Obtains energy from the Earth's satellite station (*Memperoleh tenaga daripada stesen satelit Bumi.*)
 C Three satellites are needed for worldwide communication (*Tiga satelit diperlukan untuk komunikasi seluruh dunia*)
 D Makes one complete orbit around the Earth in one month (*Membuat satu edaran lengkap mengelilingi Bumi dalam satu bulan.*)

END OF QUESTION PAPER
KERTAS PEPERIKSAAN TAMAT