

- 31 Diagram 19 shows a longitudinal section of the human heart.  
*Rajah 19 menunjukkan keratan memanjang jantung manusia*

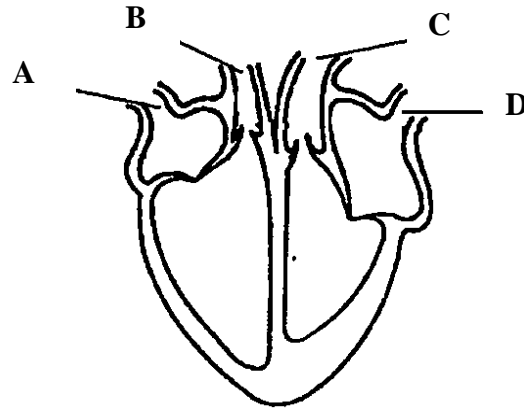


Diagram 19 / *Rajah 19*

Which blood vessels **A**, **B**, **C** or **D** has the highest blood pressure?

*Antara salur darah **A**, **B**, **C** dan **D**, yang manakah mempunyai tekanan darah paling tinggi?*

- 32 Diagram 20 shows a longitudinal section through a vein.  
*Rajah 20 menunjukkan keratan membujur suatu vena.*

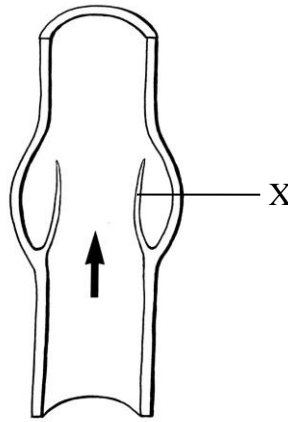


Diagram 20 / *Rajah 20*

What is the function of X?

*Apakah fungsi X?*

- A Reduce the size of lumen  
*Mengurangkan saiz lumen*
- B Prevent the backflow of the blood  
*Mengelakkan pengaliran balik darah*
- C Increase the blood pressure in vein  
*Meningkatkan tekanan darah dalam vena*
- D Increase the speed of blood flow in the vein  
*Meningkatkan kelajuan pengaliran darah dalam vena*

- 33 Diagram 21 shows the sequence in a process carried out by the leukocyte.  
*Rajah 21 menunjukkan urutan dalam satu proses yang dilakukan oleh leukosit.*

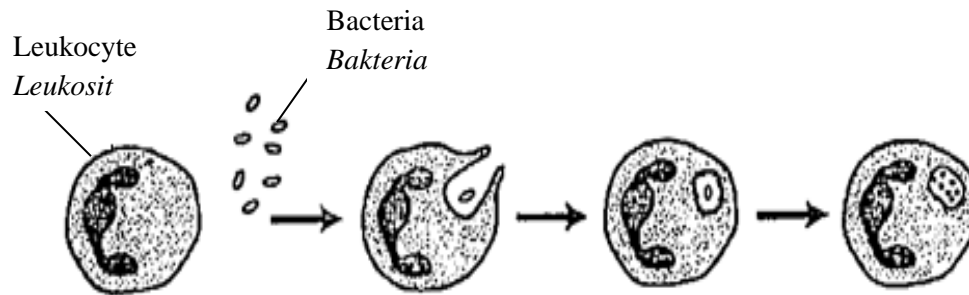


Diagram 21 / *Rajah 21*

What is the name of the process?  
*Apakah nama proses tersebut?*

- A Lysis / *Lisis*
- B Phagocytosis / *Fagositosis*
- C Agglutination / *Aglutinasi*
- D Antitoxin / *Antitoksin*

- 34 Diagram 22 shows a human skeleton.  
*Rajah 22 menunjukkan rangka manusia.*

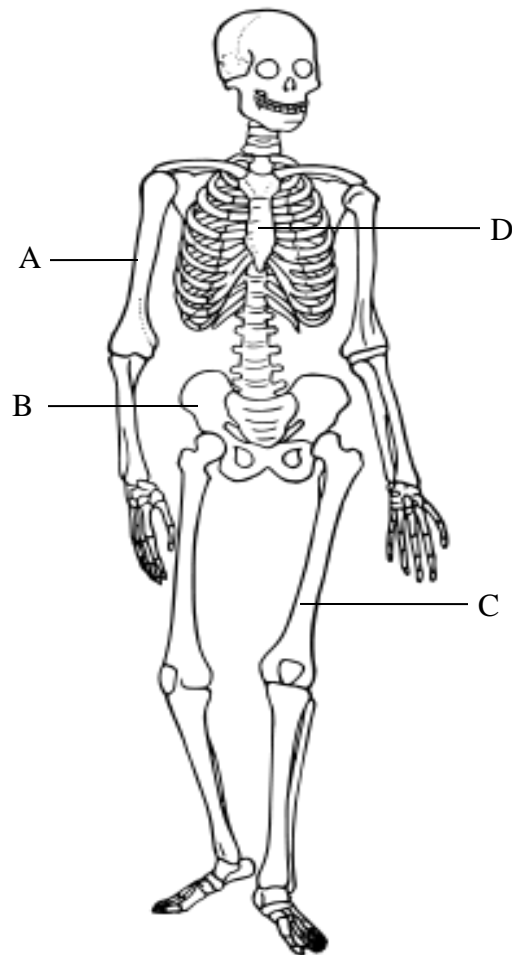


Diagram 22 / *Rajah 22*

Which bones, **A**, **B**, **C** or **D** forms a part of the axial skeleton?

*Antara tulang A, B, C dan D, yang manakah membentuk sebahagian daripada rangka paksi?*

- 35 Diagram 23 shows a pectoral girdle.  
*Rajah 23 menunjukkan lengkungan pektoral.*

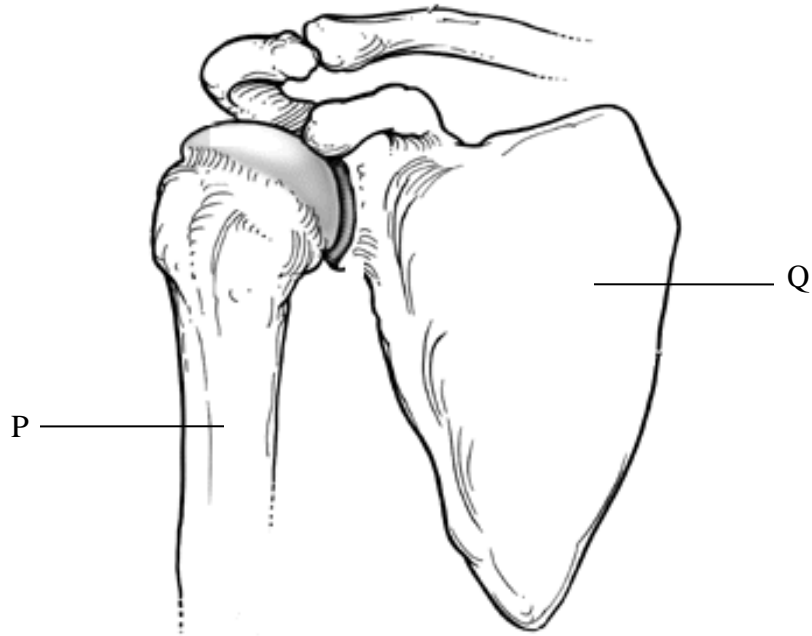


Diagram 23 / *Rajah 23*

Which tissue connects P and Q?

*Tisu manakah yang menyambungkan P dan Q?*

- A Bone / *Tulang*
- B Tendon / *Tendon*
- C Muscle / *Otot*
- D Ligament / *Ligamen*

- 36 Diagram 24 shows a type of supportive tissue in plants.  
*Rajah 24 menunjukkan sejenis tisu penyokong dalam tumbuh-tumbuhan.*

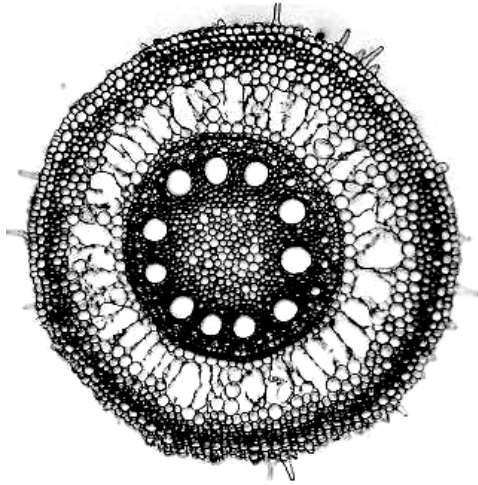


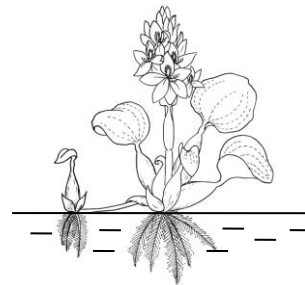
Diagram 24 / *Rajah 24*

Which plant has this type of tissue?  
*Tumbuhan manakah yang mempunyai tisu jenis ini?*

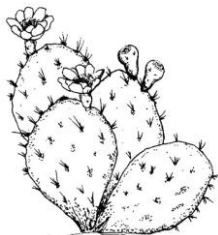
A



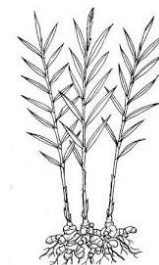
B



C



D



- 37 Diagram 25 shows an efferent neurone.  
*Rajah 25 menunjukkan neuron eferen.*

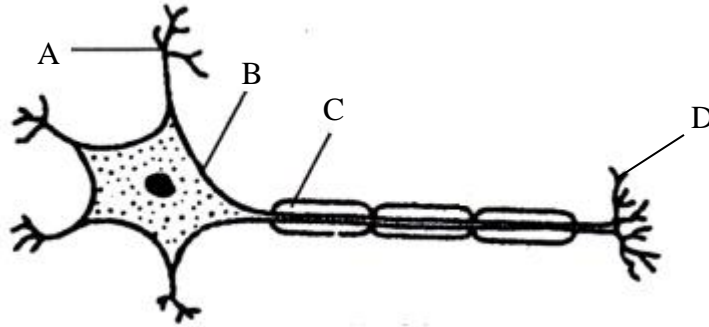


Diagram 25 / *Rajah 245*

Which structures, **A**, **B**, **C** or **D** transmits impulse to the muscle cell?

*Antara struktur A, B, C dan D, yang manakah menghantar impuls ke sel otot?*

- 38 Diagram 26 shows the main parts of the human brain.  
*Rajah 26 menunjukkan bahagian utama otak manusia.*

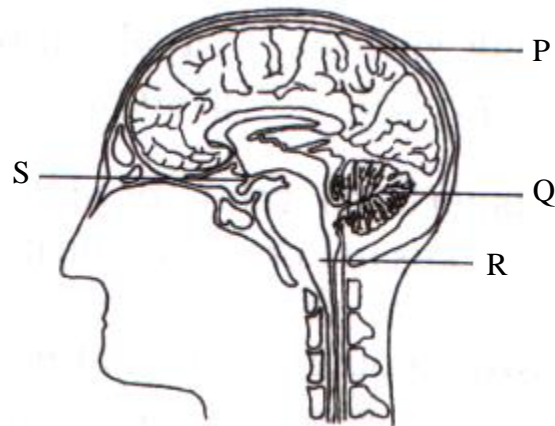


Diagram 26 / *Rajah 26*

Which part of the brain is correctly matched to its function?  
*Bahagian otak yang manakah dipadankan dengan betul dengan fungsinya?*

	Part of brain <i>Bahagian otak</i>	Function <i>Fungsi</i>
<b>A</b>	P	Controls peristalsis movement <i>Mengawal pergerakan peristalsis</i>
<b>B</b>	Q	Controls balancing movement <i>Mengawal keseimbangan pergerakan</i>
<b>C</b>	R	Controls thinking <i>Mengawal pemikiran</i>
<b>D</b>	S	Controls the rate of the heart beat <i>Mengawal kadar denyutan jantung</i>



- 39 Diagram 27 shows ultrafiltration in the Bowman's capsule.  
*Rajah 27 menunjukkan ultraturasan dalam kapsul Bowman.*

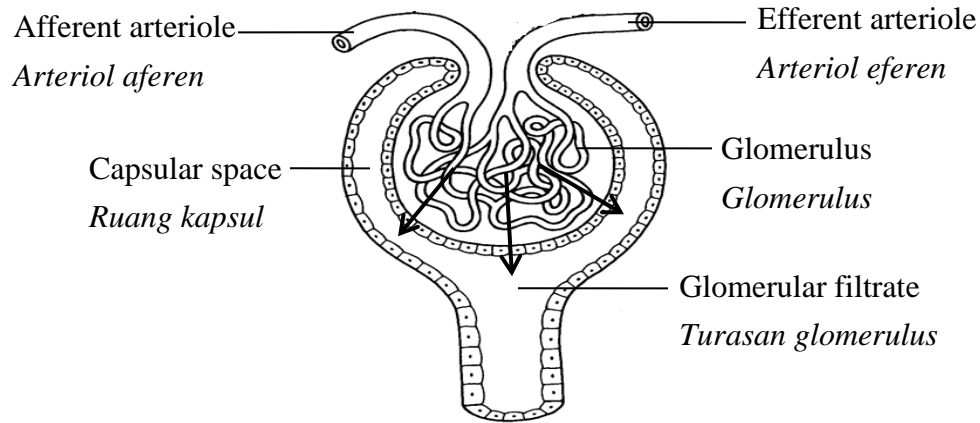


Diagram 27 / *Rajah 27*

Which of the following substances enter the capsular space?  
*Antara bahan berikut, yang manakah memasuki ruang kapsul?*

- A Water, glucose, amino acids, urea, mineral salts  
*Air, glukosa, asid amino, urea, garam mineral*
- B Water, glucose, amino acids, urea, plasma proteins  
*Air, glukosa, asid amino, urea, protein plasma*
- C Water, glucose, amino acids, glycerol, mineral salts  
*Air, glukosa, asid amino, gliserol, garam mineral*
- D Water, glucose, amino acids, urea, mineral salt, red blood cells  
*Air, glukosa, asid amino, urea, garam mineral, sel darah merah*

- 40 Diagram 28 shows a seedling placed horizontally to study its growth response.  
*Rajah 28 menunjukkan satu anak benih diletakkan secara mengufuk untuk mengkaji gerak balas pertumbuhannya.*



Diagram 28 / *Rajah 28*

Which of the following shows the correct response?  
*Antara yang berikut, yang manakah menunjukkan gerakbalas yang betul?*

A



B



C



D



- 41 Diagram 29 shows the female reproductive system.  
*Rajah 29 menunjukkan sistem pembiakan wanita.*

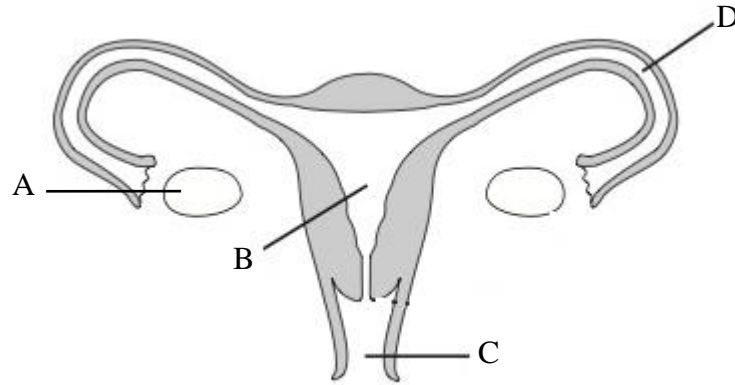


Diagram 29 / *Rajah 29*

Which structures, **A**, **B**, **C** or **D**, is the place where fertilisation occurs?  
*Antara struktur **A**, **B**, **C** dan **D**, yang manakah tempat persenyawaan berlaku?*

- 42 Table 2 shows the different methods of contraception and their functions.  
*Jadual di bawah menunjukkan kaedah mencegah kehamilan yang berbeza dan fungsinya.*

Method <i>Kaedah</i>	Function <i>Fungsi</i>
<i>P</i>	To prevent sperms from entering the reproductive system of a woman through the vagina <i>Untuk mencegah sperma daripada memasuki sistem pembiakan seorang wanita melalui faraj</i>
<i>Q</i>	To prevent the release of an ovum from the ovary <i>Untuk mencegah pembebasan ovum dari ovari</i>
<i>R</i>	To prevent the implantation of a zygote in the endometrium wall <i>Untuk mencegah penempelan zigot pada dinding endometrium</i>
<i>S</i>	To kill sperms which entering the vagina. <i>Untuk membunuh sperma yang memasuki faraj.</i>

Table 2 / *Jadual 2*

- Which of the following method is correctly matched to P, Q, R and S?  
*Antara kaedah berikut yang manakah dipadankan dengan betul kepada P, Q, R dan S?*

	<i>P</i>	<i>Q</i>	<i>R</i>	<i>S</i>
<b>A</b>	IUD device <i>Alat IUD</i>	Contraceptive pills <i>Pil perancang</i>	Diaphragm <i>Diafragma</i>	Spermisid <i>Spermisid</i>
<b>B</b>	Spermisid <i>Spermisid</i>	Contraceptive pills <i>Pil perancang</i>	IUD device <i>Alat IUD</i>	Diaphragm <i>Diafragma</i>
<b>C</b>	Diaphragm <i>Diafragma</i>	Contraceptive pills <i>Pil perancang</i>	IUD device <i>Alat IUD</i>	Spermisid <i>Spermisid</i>
<b>D</b>	Contraceptive pills <i>Pil perancang</i>	Spermisid <i>Spermisid</i>	Diaphragm <i>Diafragma</i>	IUD device <i>Alat IUD</i>

- 43 Diagram 30 shows the structure of female reproductive organ in a flowering plant.  
*Rajah 30 menunjukkan struktur organ pembiakan betina bagi satu tumbuhan berbunga.*



Diagram 30 / *Rajah 31*

How many seeds in the fruit are formed by this female reproductive organ?

*Berapakah bilangan biji di dalam buah yang dihasilkan oleh organ pembiakan betina ini?*

- A 1
- B 2
- C 3
- D 4

- 44 Diagram 31 shows a cross-section of a dicotyledonous stem which had secondary growth.  
*Rajah 31 menunjukkan keratan rentas batang dikotiledon yang telah mengalami pertumbuhan sekunder.*

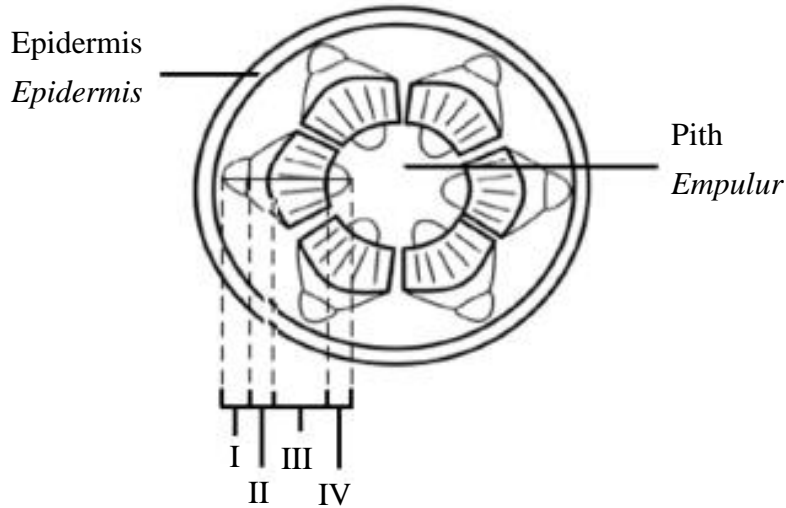


Diagram 31 / *Rajah 31*

Which arrangement of the tissues is correct?  
*Susunan tisu-tisu yang manakah betul?*

	I	II	III	IV
<b>A</b>	Primary phloem <i>Floem primer</i>	Secondary phloem <i>Floem sekunder</i>	Secondary xylem <i>Xilem sekunder</i>	Primary xylem <i>Xilem primer</i>
<b>B</b>	Secondary phloem <i>Floem sekunder</i>	Primary phloem <i>Floem primer</i>	Secondary phloem <i>Floem sekunder</i>	Secondary xylem <i>Xilem sekunder</i>
<b>C</b>	Secondary phloem <i>Floem sekunder</i>	Secondary xylem <i>Xilem sekunder</i>	Secondary phloem <i>Floem sekunder</i>	Primary phloem <i>Floem primer</i>
<b>D</b>	Secondary xylem <i>Xilem sekunder</i>	Secondary phloem <i>Floem sekunder</i>	Primary phloem <i>Floem primer</i>	Secondary phloem <i>Floem sekunder</i>

- 45 Diagram 32 shows a monohybrid cross between durian tree P and durian tree Q. 50% of the offspring are tall and 50% are dwarf.  
*Rajah 32 menunjukkan kacukan monohibrid antara pokok durian P dengan pokok Q. 50% daripada anaknya adalah tinggi dan 50% lagi adalah kerdil.*

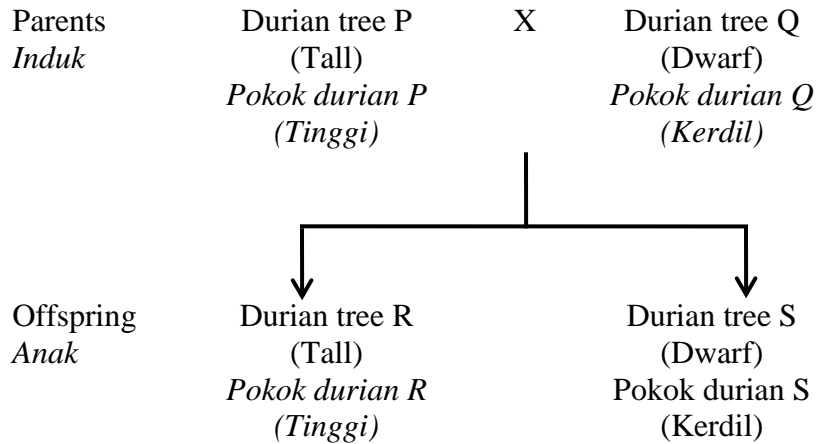


Diagram 32 / *Rajah 32*

If durian tree R is crossed with durian tree S, what percentage of the trees produced will be dwarf?

*Jika pokok durian R dikacukkan dengan pokok durian S, berapa peratus pokok durian yang dihasilkan adalah kerdil?*

- A 0%
- B 25%
- C 50%
- D 75%

- 46 Diagram 33 shows a pair of homologous chromosomes.  
*Rajah 33 menunjukkan sepasang kromosom homolog.*

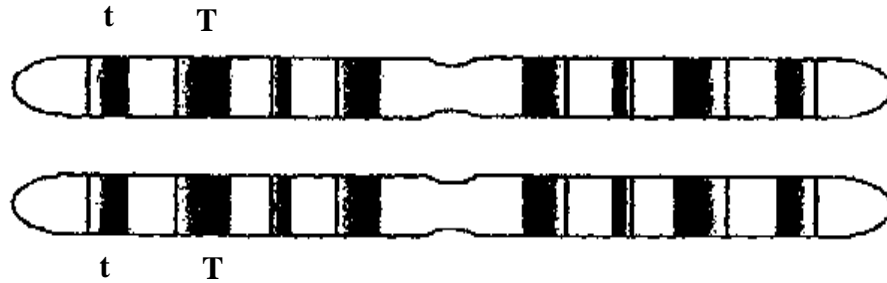


Diagram 33 / *Rajah 33*

What do T and t represent?

*Apakah yang diwakili oleh T dan t?*

- A Alleles / *Alel*
- B Genotype / *Genotip*
- C Phenotype / *Fenotip*
- D Linked genes / *Gen terangkai*



- 47 Diagram 34 shows the karyotype of an individual.  
*Rajah 34 menunjukkan kariotip seorang individu.*

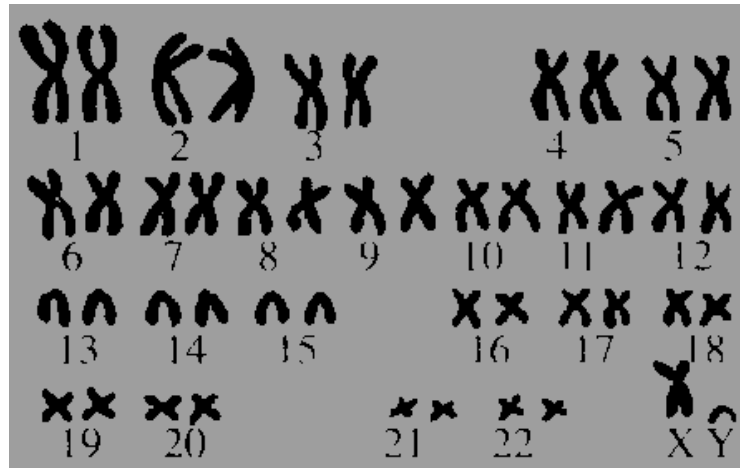


Diagram 34 / *Rajah 34*

Which of the following shows the number of chromosomes in a gamete produced by the individual?

*Antara berikut, yang manakah menunjukkan bilangan kromosom dalam gamet yang dihasilkan oleh individu itu?*

- A 22 + Y
- B 22 + XY
- C 44 + Y
- D 44 + X

**48** Rahimah's blood group is type A. Which blood groups can be the recipients of her blood?  
*Rahimah mempunyai kumpulan darah jenis A. Kumpulan darah yang manakah boleh menjadi penerima darahnya?*

- A** Types O and B / *Jenis O dan B*
- B** Types B and AB / *Jenis B dan AB*
- C** Types A and AB / *Jenis A dan AB*
- D** Types O and AB / *Jenis O dan AB*

**49** Which of the following is a continuous variation?  
*Antara berikut, yang manakah variasi selanjut?*

- A** Tongue rolling / *Menggulung lidah*
- B** Intelligence / *Kebijaksanaan*
- C** Blood type ABO / *Kumpulan darah ABO*
- D** Thumbprint / *Cap jari*

- 50 The following are factors which causes variations in humans.  
*Faktor-faktor berikut boleh menyebabkan variasi kepada manusia.*

X	-	Genetic factor <i>Faktor genetik</i>
Y	-	Environmental factor <i>Faktor persekitaran</i>
Z	-	Gene mutation <i>Mutasi gen</i>

Which of the three factors listed above causes the difference in blood groups in humans.  
*Antara tiga faktor yang disenaraikan di atas, yang manakah menyebabkan perbezaan pada kumpulan darah manusia?*

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

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



**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. Answer each question by blackening the correct space on the objective answer sheet.  
*Jawab setiap soalan dengan menghitamkan ruang yang betul pada kertas jawapan objektif.*
4. Blacken only **one** space for each question.  
*Hitamkan satu ruang sahaja bagi setiap soalan.*
5. If you wish to change your answer, erase the blackened mark that you have made.  
Then blacken the space for the new answer.  
*Sekiranya anda hendak menukar jawapan, padamkan tanda yang telah dibuat.  
Kemudian hitamkan jawapan yang baru.*
6. The diagrams in the questions provided are not drawn to scale unless stated.  
*Rajah yang mengiringi soalan tidak dilukis mengikut skala kecuali dinyatakan.*
7. You may use a scientific calculator.  
*Anda dibenarkan menggunakan kalkulator saintifik.*