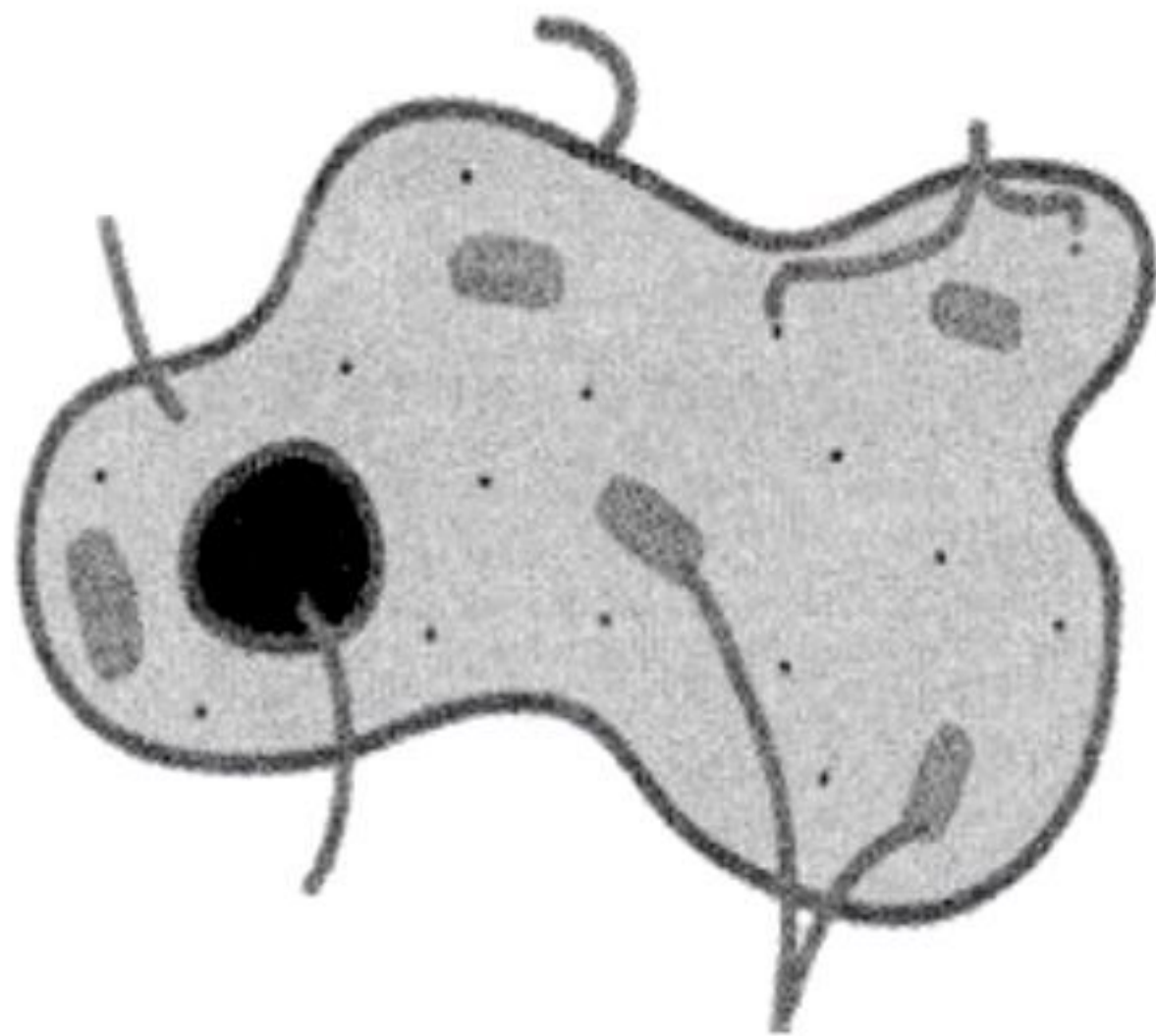


Jawab **semua** soalan

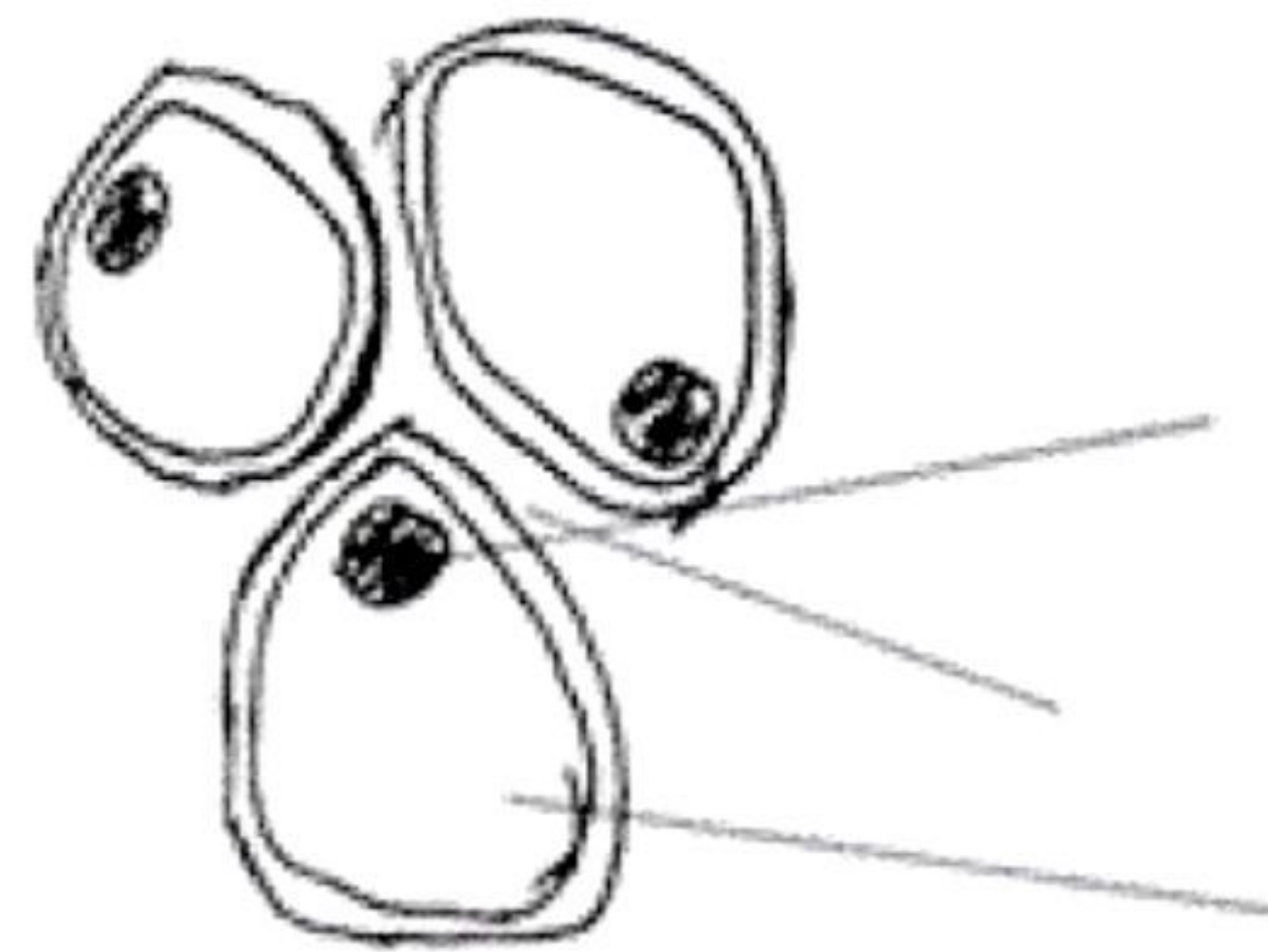
Answer **all** the question

1. Antara yang berikut, cara melabel yang manakah betul untuk lukisan biologi?
Which of the following labelling methods is correct for a biological drawing?

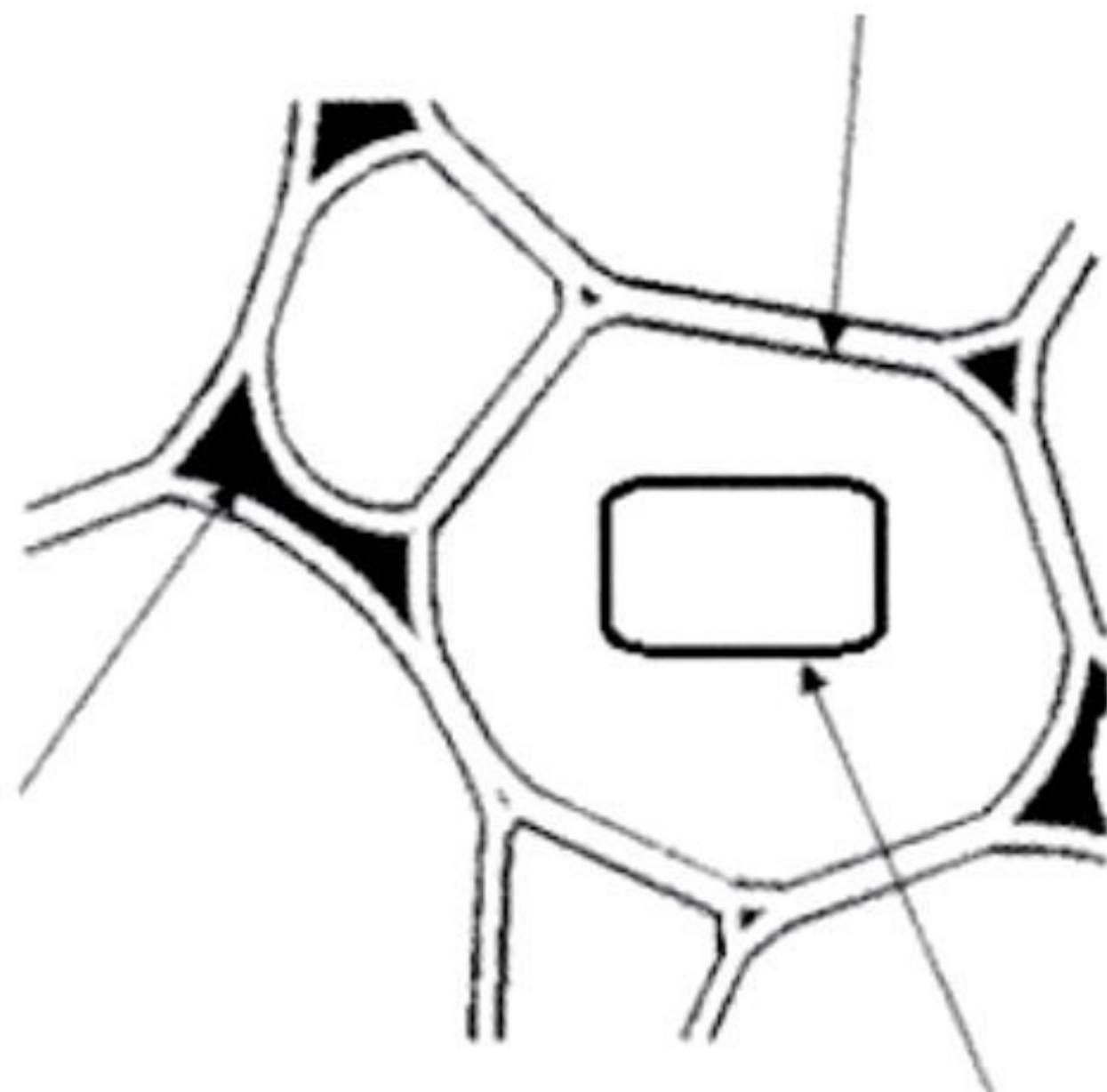
A



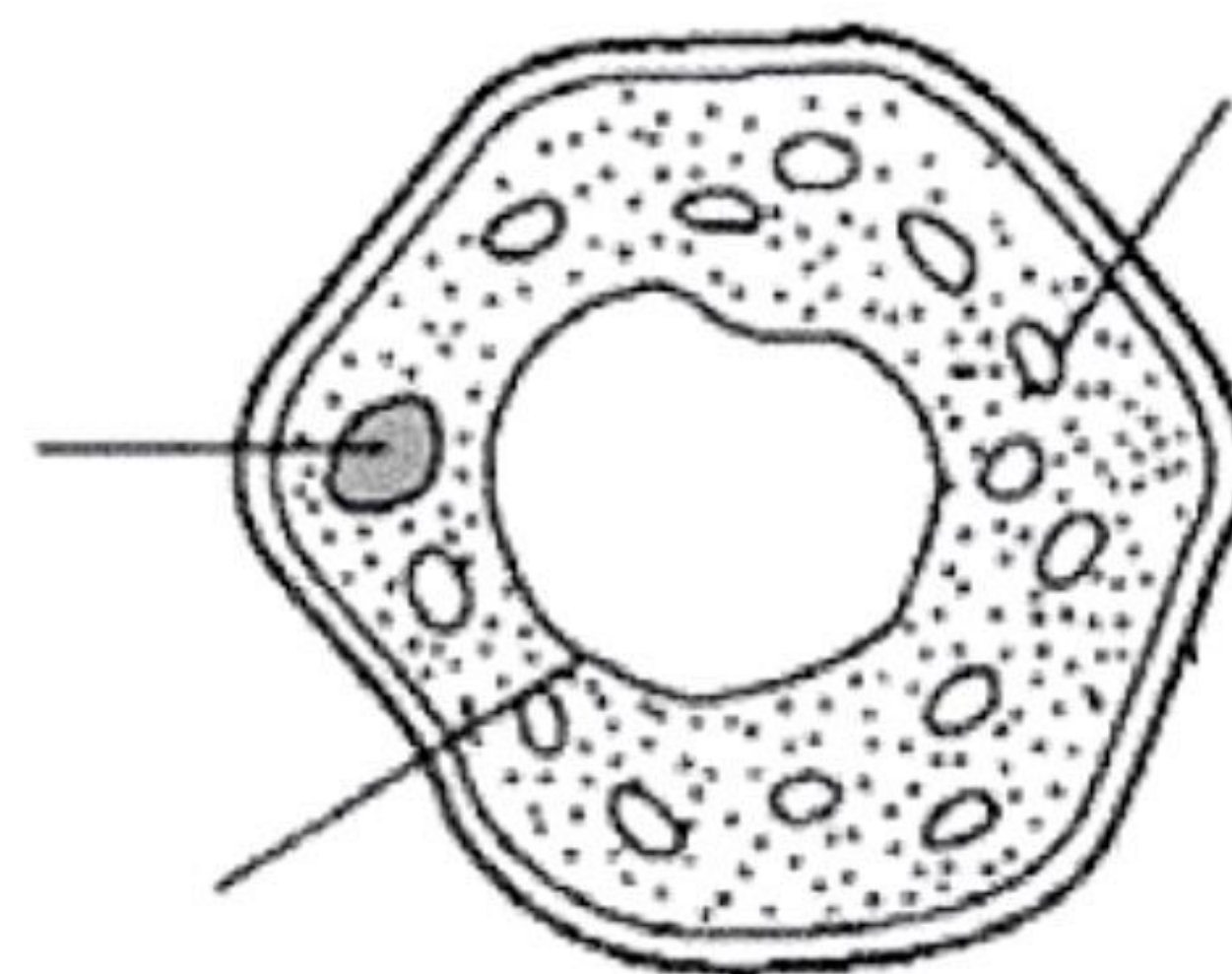
B



C

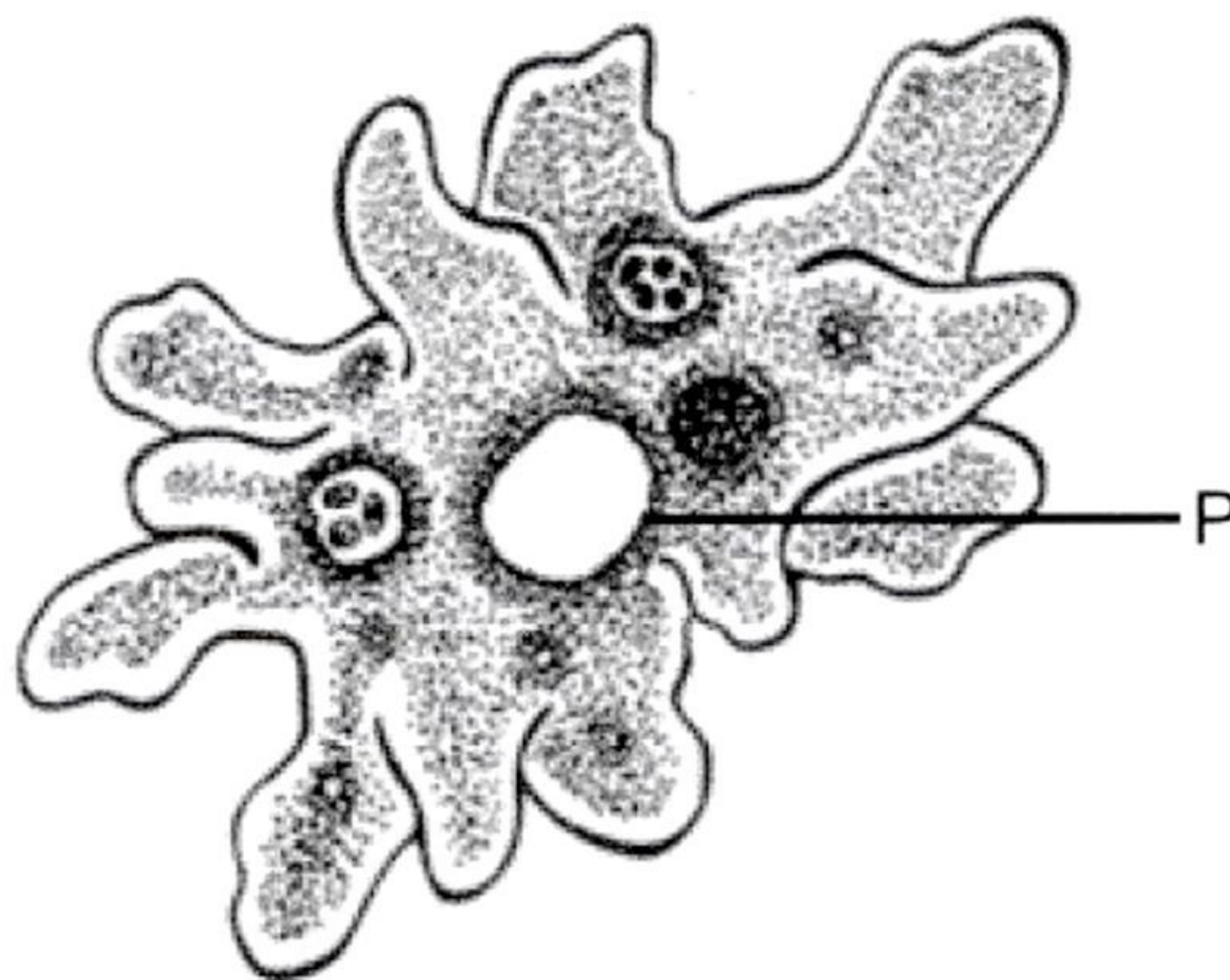


D



<https://t.me/cikgufazliebiosensei>

2. Rajah 1 menunjukkan sejenis organisma unisel.
Diagram 1 shows a type of unicellular organism.



Rajah 1 / Diagram 1

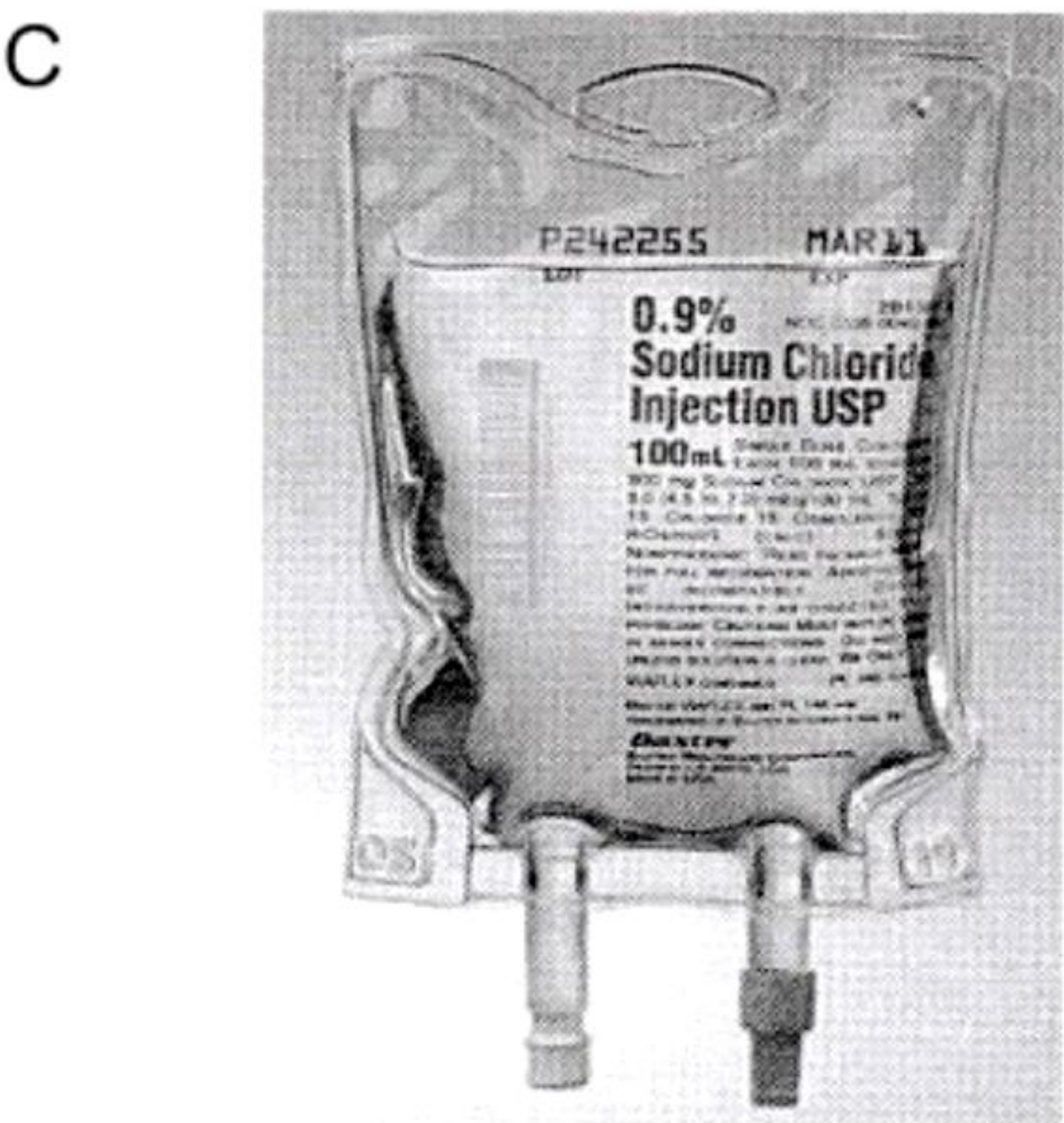
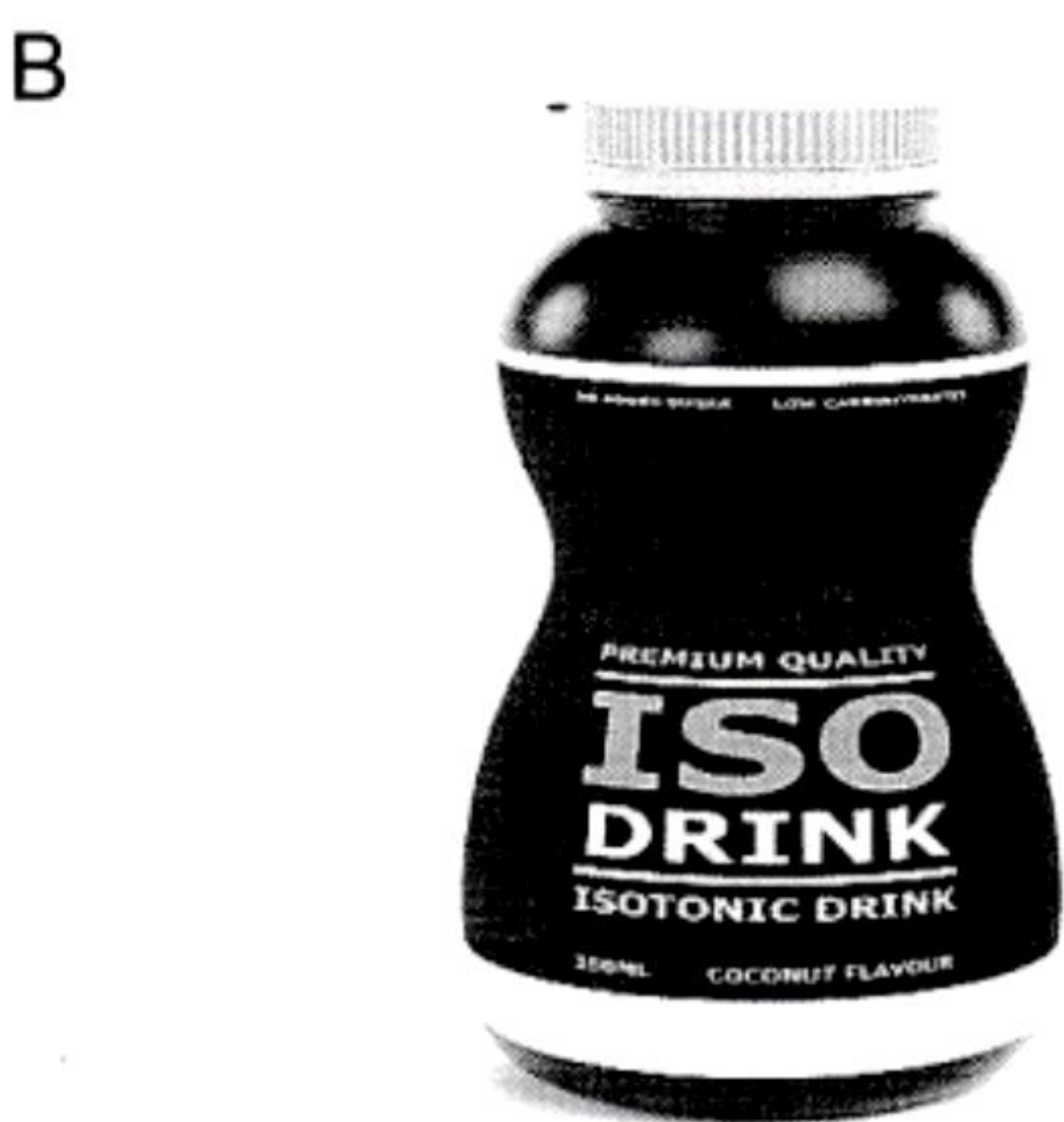
Apakah yang akan berlaku sekiranya struktur P tidak berfungsi?

What will happen if structure P does not function?

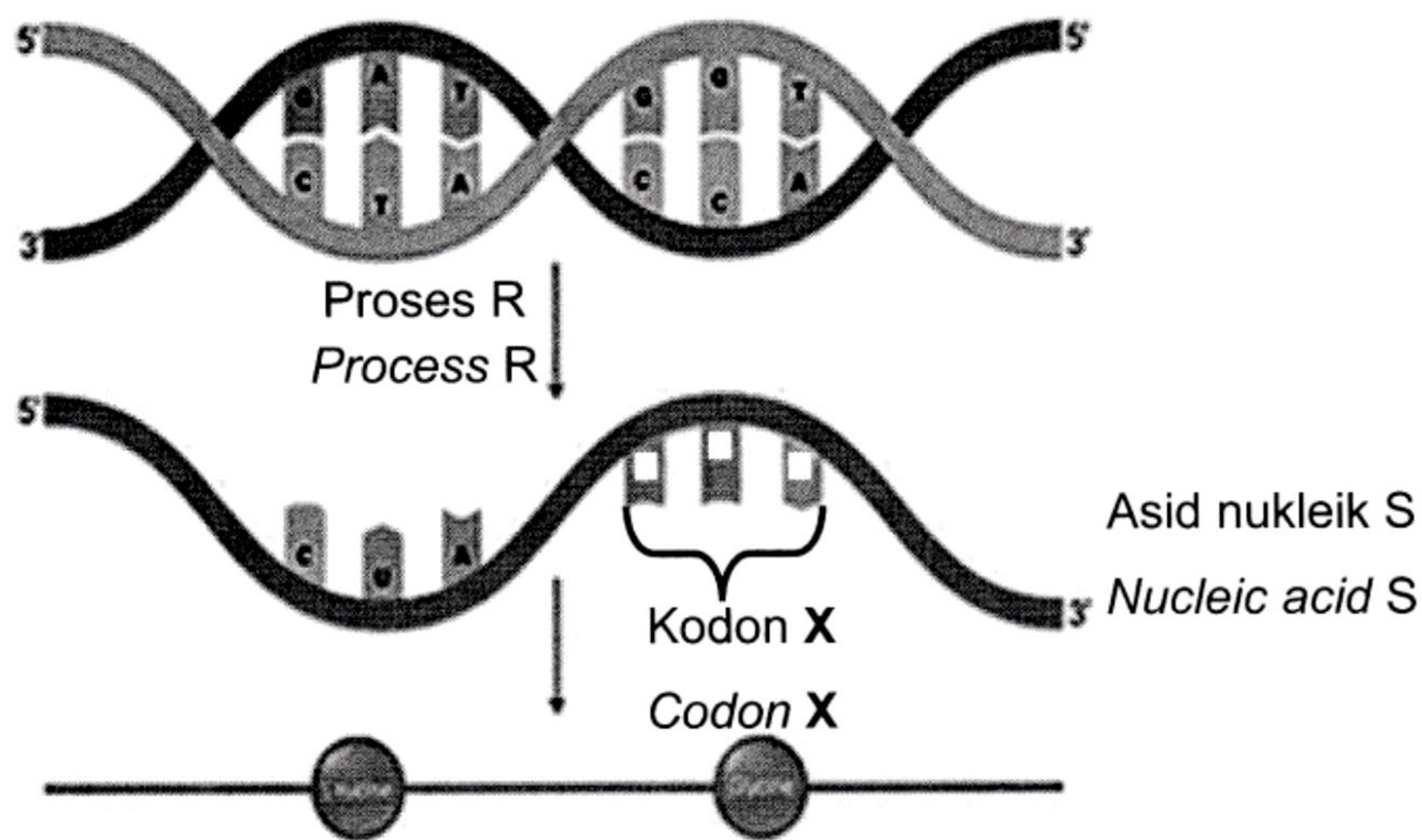
- A Pengosmokawalaturan kurang berlaku
Osmoregulation less occurs
- B Zarah makanan kurang dihidrolisis oleh lisozim
Food particles are less hydrolysed by lysozyme
- C Konjugasi terencat apabila persekitaran tidak sesuai
Conjugation is inhibited when the environment is not suitable
- D Zarah makanan tidak dapat diperangkap sewaktu fagositosis
Food particles cannot be trapped during phagocytosis

3. Antara yang berikut, larutan yang manakah sesuai diberikan kepada atlet yang keletihan setelah selesai melakukan aktiviti maraton?

Which of the following solutions is suitable to be given to an athlete who is fatigued after completing a marathon?



4. Rajah 2 menunjukkan kod genetik pada dua jenis asid nukleik yang diterjemahkan kepada protein.
- Diagram 2 shows the genetic code in two types of nucleic acids that is translated into protein.



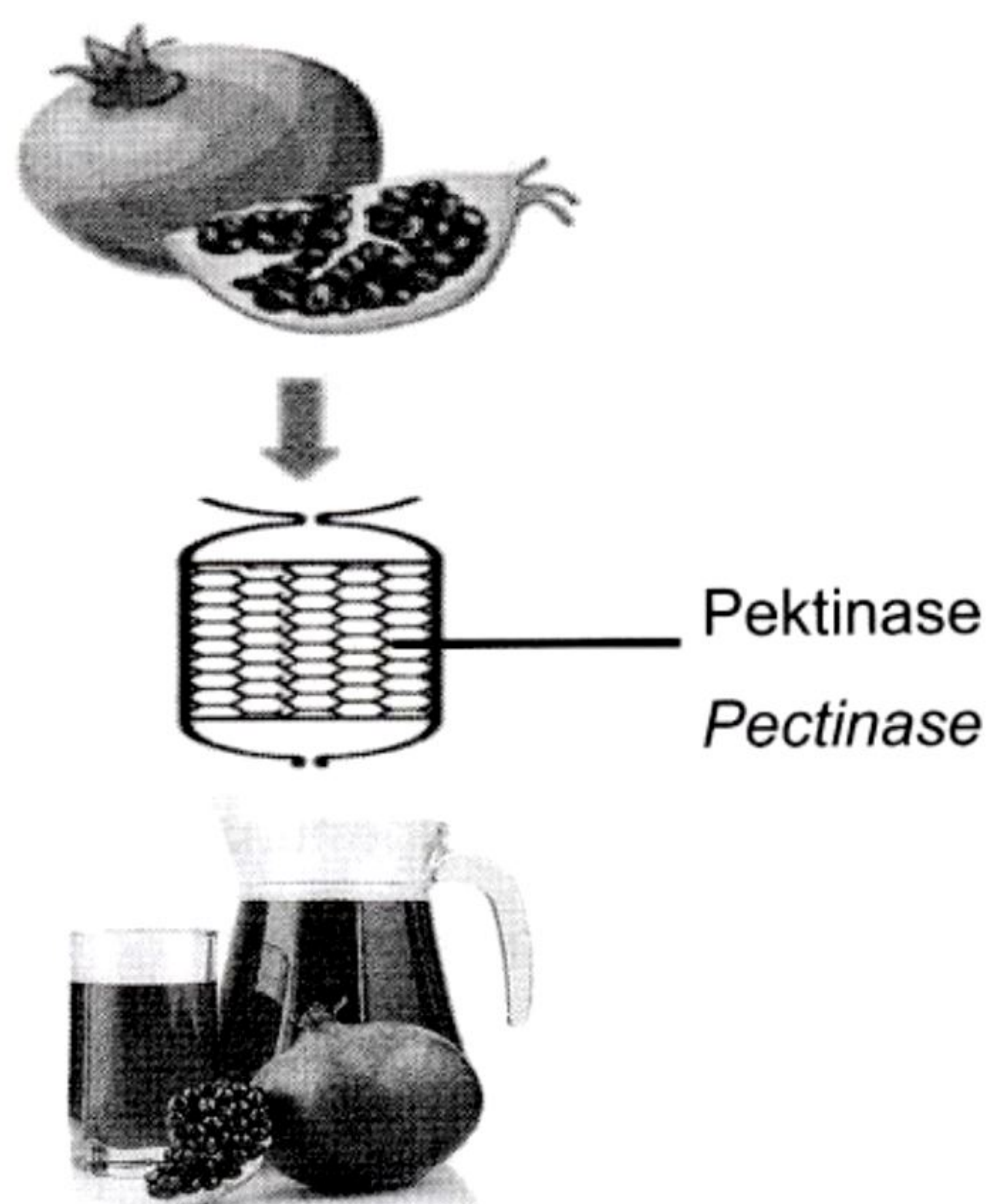
Rajah 2 / Diagram 2

Apakah proses R, asid nukleik S dan kodon X?
What is process R, nucleic acid S and codon X?

	Proses R <i>Process R</i>	Asid nukleik S <i>Nucleic acid S</i>	Kodon X <i>Codon X</i>
A	Transkripsi <i>Transcription</i>	mRNA	CCA
B	Transkripsi <i>Transcription</i>	mRNA	GGU
C	Translasi <i>Translation</i>	DNA	CCU
D	Translasi <i>Translation</i>	DNA	GGU

5. Rajah 3 menunjukkan sebahagian langkah penghasilan jus buah menggunakan enzim tersekat gerak.

Diagram 3 shows part of the steps in producing fruit juice using immobilised enzymes.



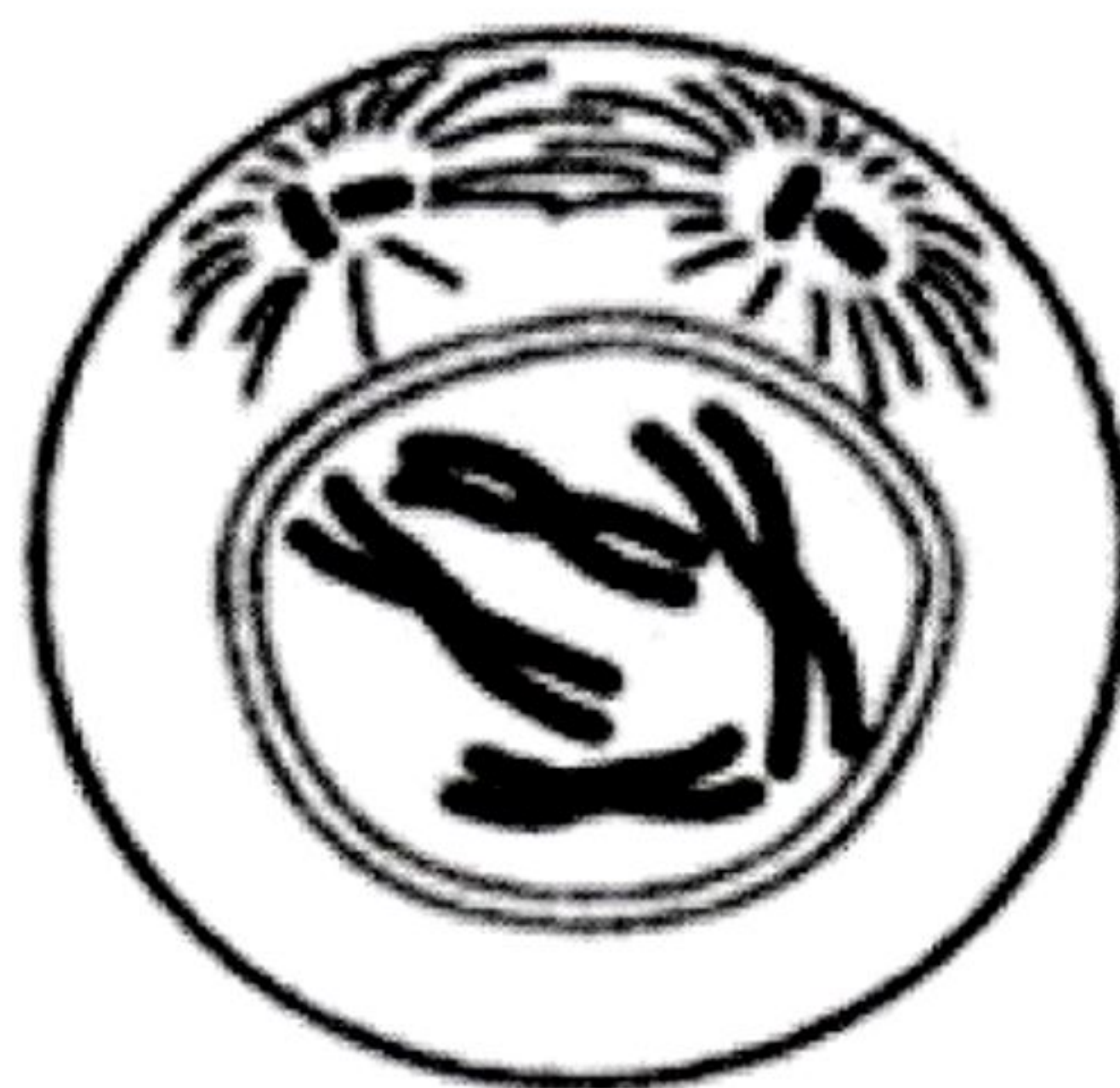
Rajah 3 / Diagram 3

Apakah tujuan penggunaan enzim tersebut?

What is the purpose of using that enzyme?

- I Jus buah yang dihasilkan mengandungi kandungan nutrien tinggi
Fruit juice produced contains a high nutrient content
 - II Menjadikan jus lebih jernih dengan mengurangkan mendapan
Makes the juice clearer by reducing sediment
 - III Kepekatan gula semulajadi dalam jus bertambah
The concentration of natural sugar in the juice increases
 - IV Meningkatkan isipadu jus yang dapat diekstrak
Increases the volume of juice that can be extracted
-
- A I dan II / I and II
 - B I dan III / I and III
 - C II dan IV / II and IV
 - D III dan IV / III and IV

6. Rajah 4 menunjukkan satu sel haiwan yang sedang mengalami pembahagian sel.
Diagram 4 shows an animal cell that is undergoing a cell division.



Rajah 4 / Diagram 4

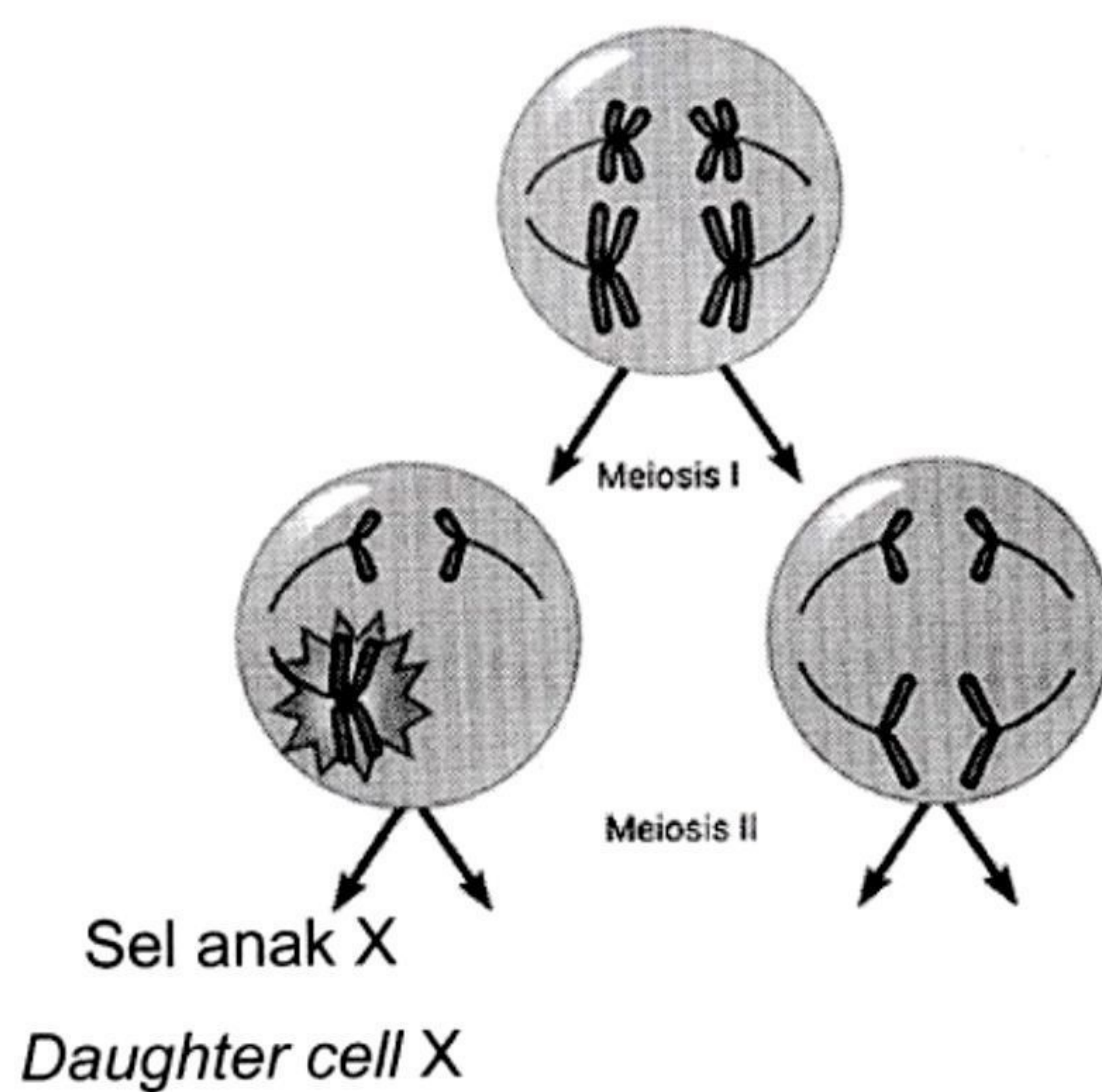
Antara yang berikut, yang manakah menunjukkan bilangan kromosom dijumpai dalam organ pembiakan dan gamet haiwan tersebut?

Which of the following shows the number of chromosomes found in the reproductive organ and the gametes of the animal?

	Organ pembiakan <i>Reproductive organ</i>	Gamet <i>Gamete</i>
A	4	4
B	4	2
C	2	4
D	2	2

7. Rajah 5 menunjukkan sebahagian fasa sewaktu meiosis.

Diagram 5 shows some of the phases during meiosis.

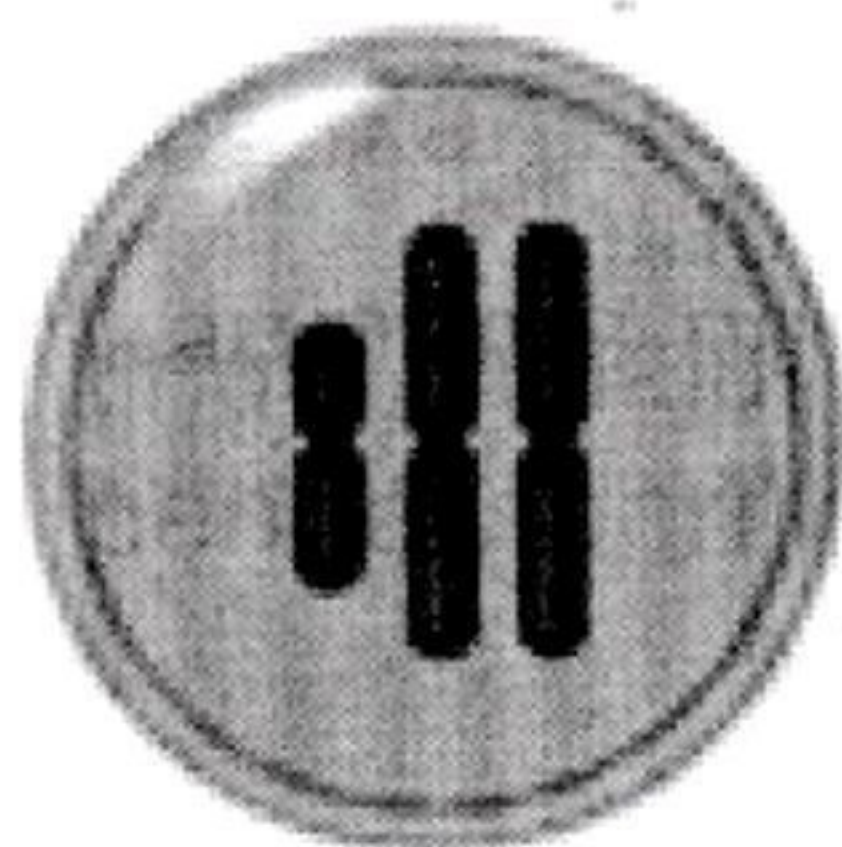


Rajah 5 / Diagram 5

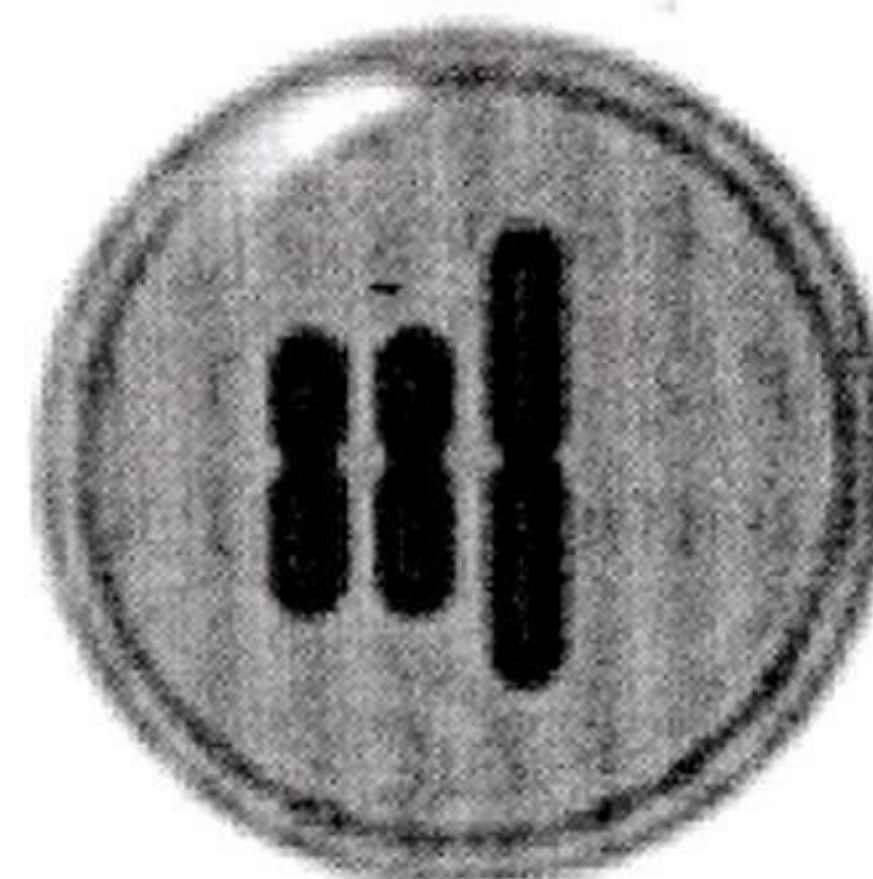
Antara yang berikut, yang manakah mewakili sel anak X?

Which of the following represents daughter cell X?

A



B



C

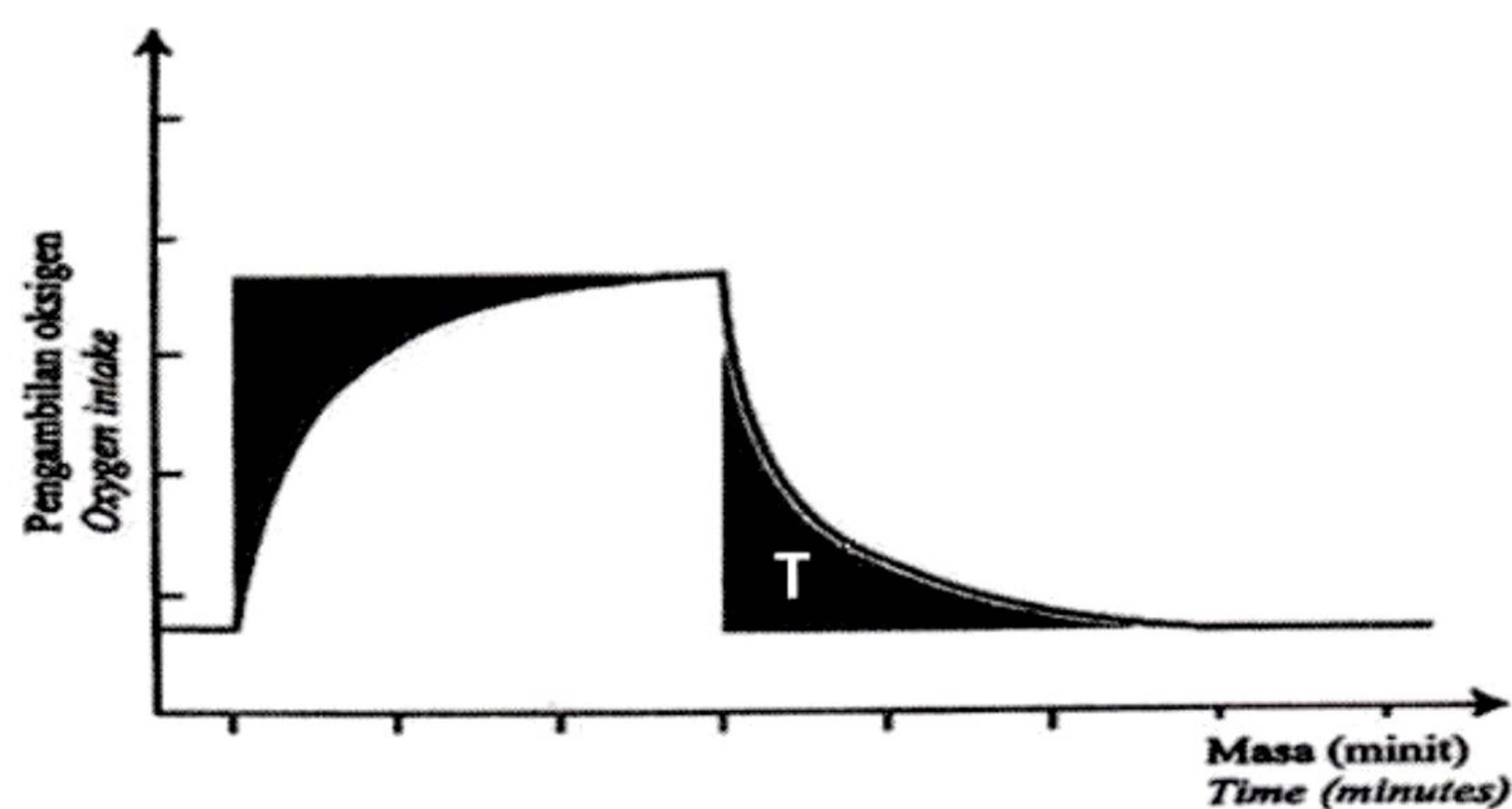


D



8. Rajah 6 menunjukkan graf kandungan oksigen dalam otot selepas melakukan aktiviti cergas.

Diagram 6 shows a graph of oxygen content in the muscles after performing vigorous activity.



Rajah 6 / Diagram 6

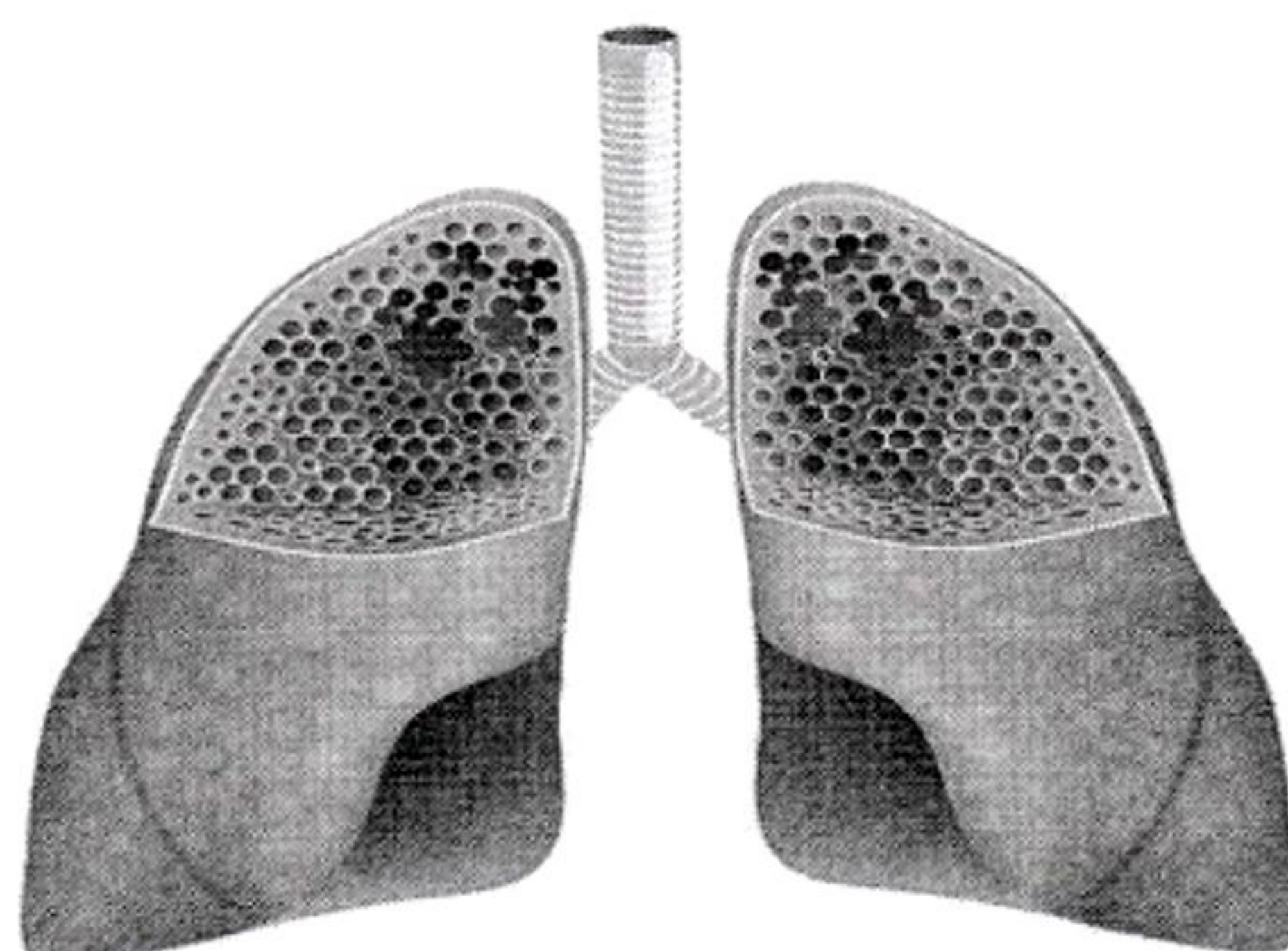
Apakah aktiviti yang menyebabkan keadaan di T?

What activity causes the condition at T?

- A Lari pecut
Sprinting
- B Berjalan
Walking
- C Membaca buku
Reading a book
- D Bernafas tercungap-cungap
Fast and deep breathing

9. Rajah 7 menunjukkan keadaan peparu seorang individu yang mengidap sejenis penyakit COPD.

Diagram 7 shows the condition of the lung of an individual suffering from a COPD-related disease.



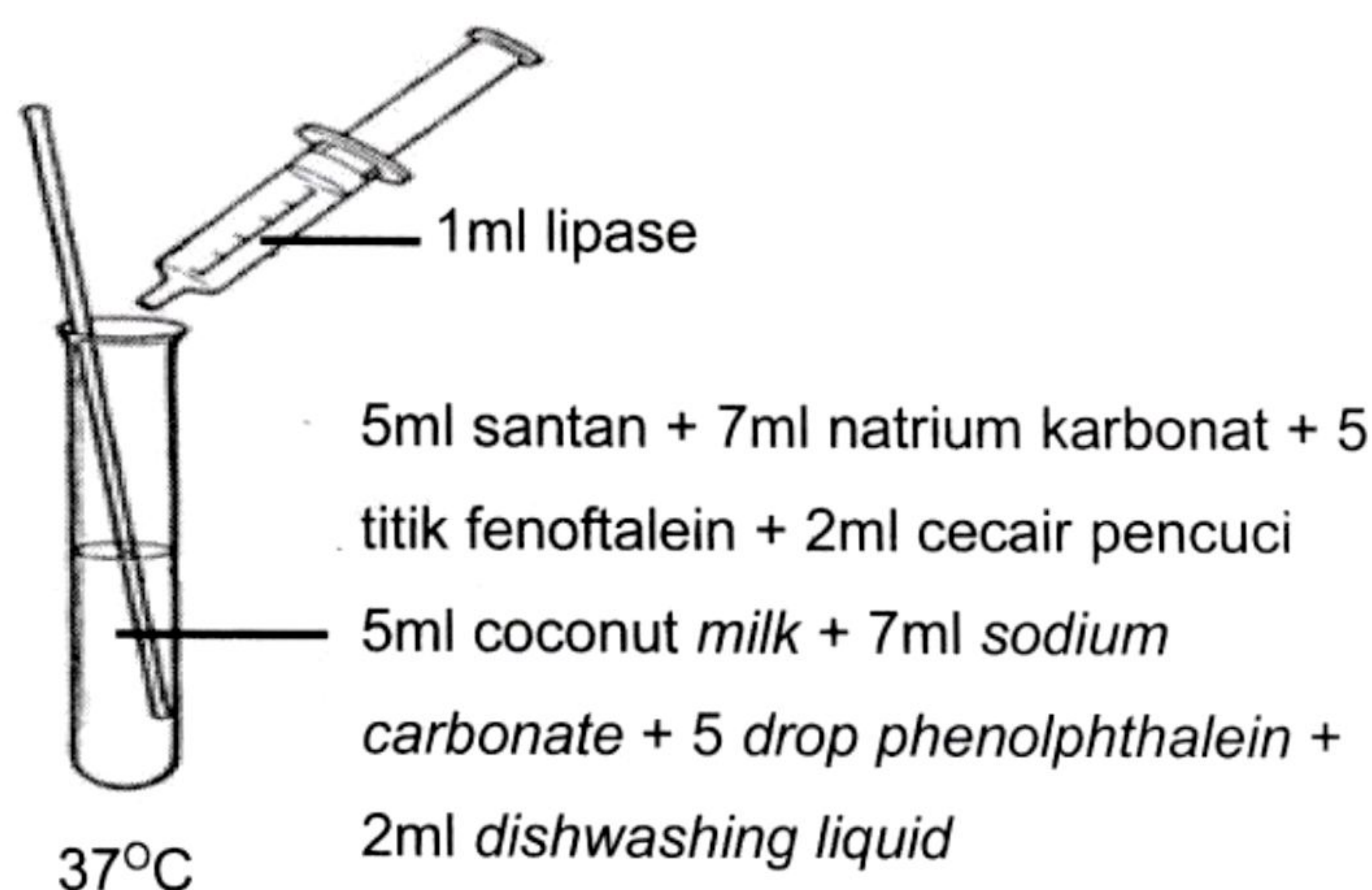
Rajah 7 / Diagram 7

Apakah kesan penyakit itu terhadap ciri penyesuaian alveolus?

What is the effect of the disease on the adaptive features of the alveoli?

- A Saiz alveolus bertambah besar
The size of the alveolus increases
- B Dinding alveolus menjadi semakin nipis
The alveolus wall becomes thinner
- C Jaringan kapilari darah sekeliling alveolus berkurang
The network of blood capillaries surrounding the alveolus decreases
- D Permukaan dinding alveolus menjadi kurang lembap
The surface of the alveolus wall becomes less moist

10. Rajah 8 menunjukkan satu eksperimen yang dijalankan untuk mengkaji pencernaan lipid.
Diagram 8 shows an experiment carry out to study digestion of lipid.



Rajah 8 / Diagram 8

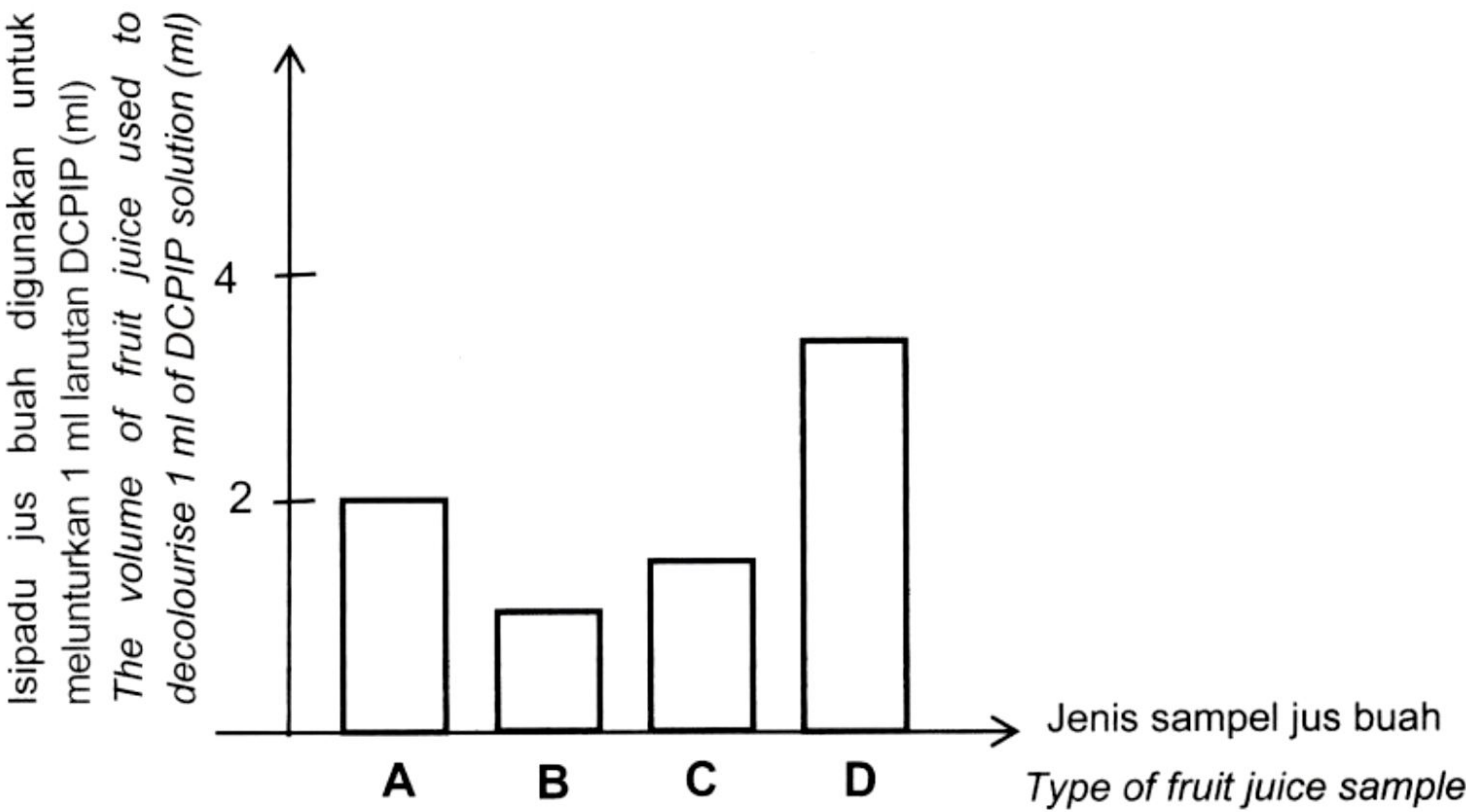
Apakah tujuan penggunaan cecair pencuci dalam eksperimen tersebut?

What is the purpose of using the detergent in the experiment?

- A Memangkin hidrolisis lipid kepada asid lemak dan gliserol
Catalyses the hydrolysis of lipids into fatty acids and glycerol
- B Menjadi penunjuk pH untuk mengesan perubahan keasidan
Acts as a pH indicator to detect changes in acidity
- C Mengemulsikan lipid supaya luas permukaan lipid bertambah
Emulsifies lipids so that the surface area of the lipids increases
- D Menyediakan medium beralkali untuk tindakan enzim lipase
Provides an alkaline medium for the action of lipase enzyme

11. Rajah 9 menunjukkan graf hasil eksperimen yang telah dijalankan oleh sekumpulan murid untuk mengkaji kepekatan vitamin C dalam sampel jus buah.

Diagram 9 shows a graph of the results of an experiment that was carried out by a group of students to study the concentration of vitamin C in fruit juice samples.



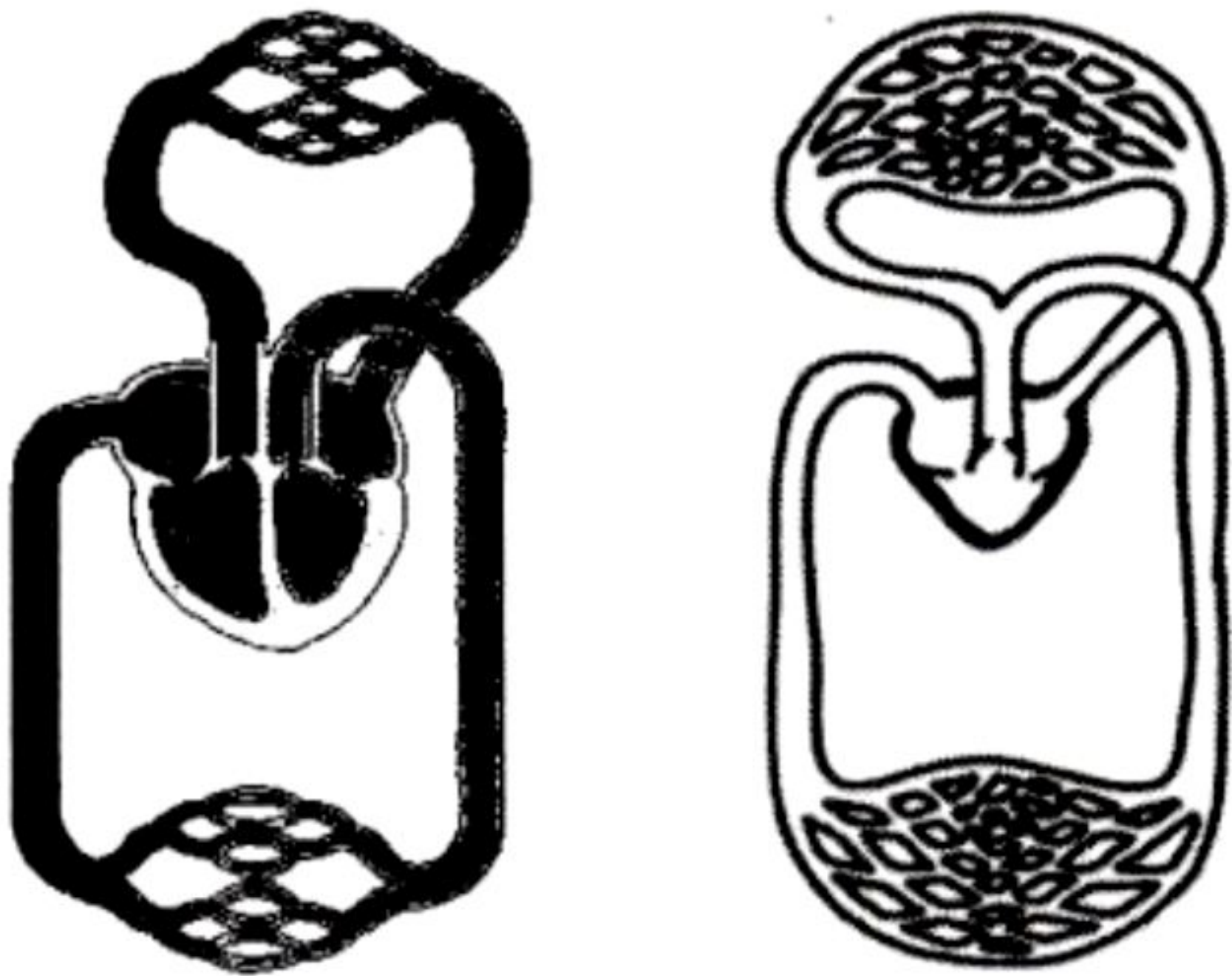
Rajah 9 / Diagram 9

Antara sampel jus buah berlabel **A**, **B**, **C** dan **D**, yang manakah mengandungi kepekatan vitamin C paling tinggi?

*Which fruit juice samples labelled **A**, **B**, **C**, or **D** contains the highest concentration of vitamin C?*

12. Rajah 10 menunjukkan dua jenis sistem peredaran darah dalam organisma.

Diagram 10 shows two types of circulatory systems in an organism.



Rajah 10 / Diagram 10

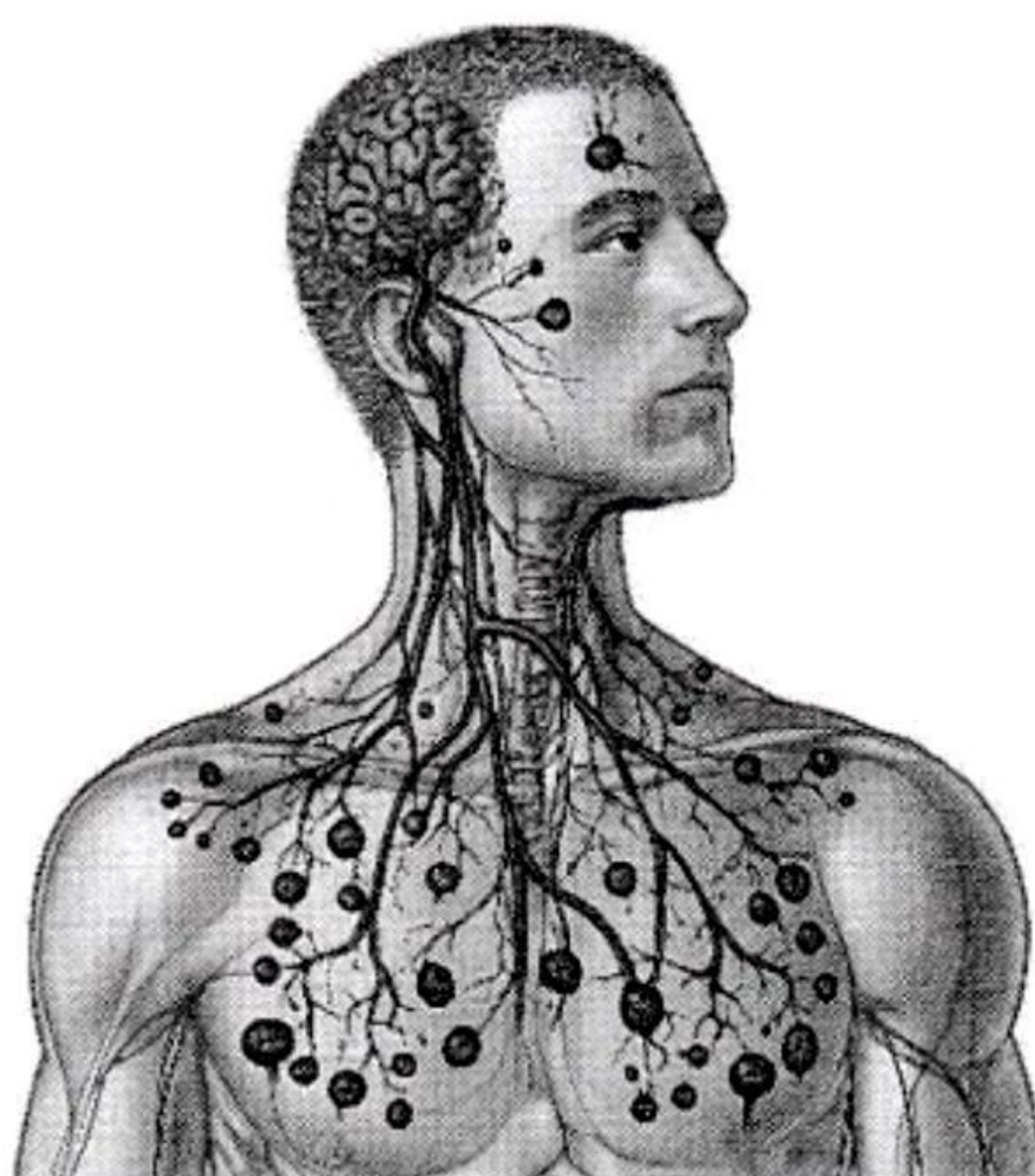
Apakah ciri yang membezakan kedua-dua sistem peredaran darah tersebut?

What are the characteristics that differentiate the two circulatory systems?

- A Jenis sistem peredaran darah
Type of blood circulatory system
- B Fungsi sistem peredaran darah
Function of blood circulatory system
- C Bilangan darah masuk dalam jantung
The number of bloods enter the heart
- D Bilangan ruang dalam jantung
Number of chambers in the heart

13. Rajah 11 menunjukkan sebahagian jenis sistem dalam manusia.

Diagram 11 shows part of a type system in humans.



Rajah 11 / Diagram 11

Antara yang berikut, sel darah yang manakah dihasilkan oleh sistem tersebut?

Which of the following blood cells is produced by the system?

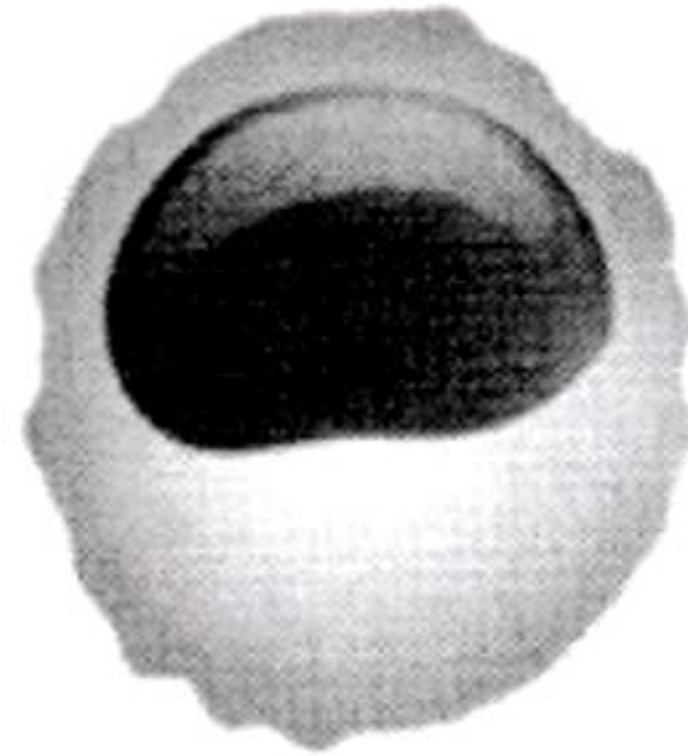
A



B



C



D



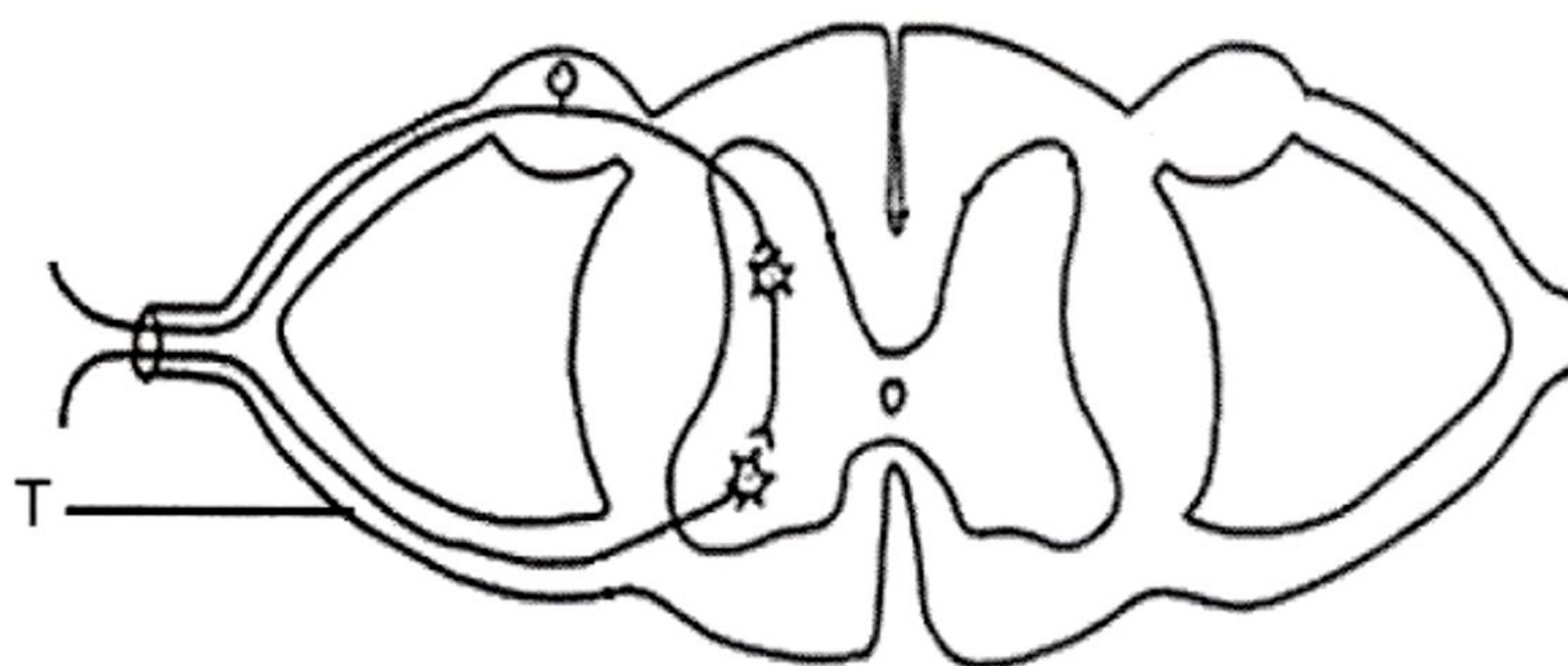
14. Apakah langkah paling sesuai perlu dilakukan oleh seorang perempuan yang telah dijangkiti virus kurang daya tahan manusia (HIV) untuk mencegah bayinya daripada mengidap AIDS?

What is the most appropriate step that should be taken by a woman who has been infected with the human immunodeficiency virus (HIV) to prevent her baby from developing AIDS?

- A Memberi suntikan vaksin secara berkala
Give vaccination injections regularly
- B Penggunaan susu formula menggantikan susu ibu
Use formula milk to replace breast milk
- C Melakukan proses pemindahan darah menggantikan darah bayi
Perform a blood transfusion to replace the baby's blood
- D Mendapatkan suntikan ubat retroviral untuk bayi dalam tempoh tertentu
Receive antiretroviral injections for the baby within a specific period

15. Rajah 12 menunjukkan keratan rentas saraf tunjang.

Diagram 12 shows a cross section of the spinal cord.



Rajah 12 / Diagram 12

Apakah kesan sekiranya bahagian T cedera?

What is the effect if part T is injured?

- A Impuls saraf tidak dapat dihantar ke pusat integrasi
Nerve impulses cannot be transmitted to the integration centre
- B Serebrum tidak dapat menginterpretasi impuls saraf
The cerebrum cannot interpret nerve impulses
- C Neuron deria dalam akar ventral cedera
Sensory neurons in the ventral root are injured -
- D Efektor tidak menghasilkan gerak balas
Effector does not produce a response

16. Maklumat berikut berkaitan kesan penggunaan sejenis dadah.

The following information is related to the effects of certain drug use.

- Mengurangkan atau menghilangkan rasa sakit sewaktu pembedahan
Reduce or relieve pain during surgeries
- Menjadikan pesakit berasa tenang dan mengantuk
Make patients feel calm and sleepy

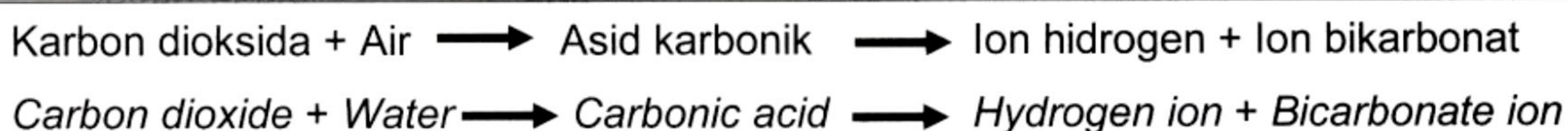
Antara yang berikut, jenis dadah yang manakah digunakan untuk tujuan tersebut?

Which of the following types of drugs is used for that purpose?

- A Dadah narkotik
Narcotic drugs
- B Dadah khayalan
Hallucinogenic drugs
- C Dadah penenang
Sedative drug
- D Dadah peransang
Stimulant drug

17. Maklumat berikut menunjukkan pembentukan asid karbonik dalam plasma darah.

The following information shows the formation of carbonic acid in blood plasma.



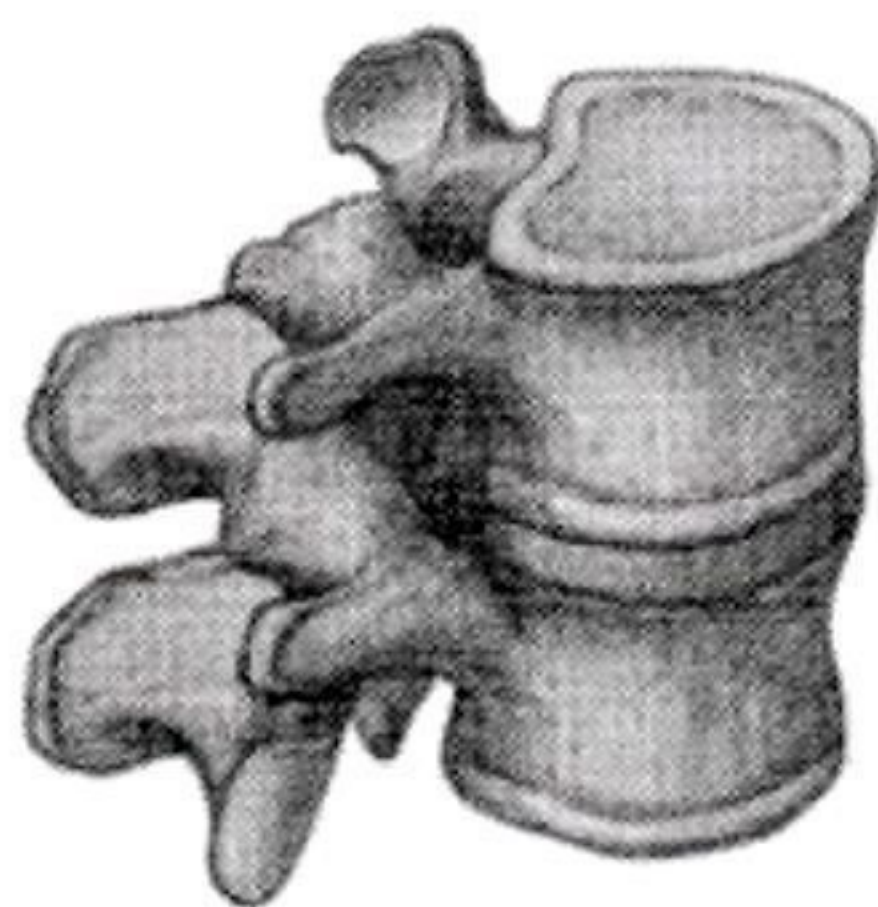
Antara yang berikut, proses kawalatur yang manakah akan berlaku dalam darah?

Which of the following regulatory processes will occur in the blood?

- A Kadar ventilasi menurun
The ventilation rate decreases
- B Kadar denyutan jantung menurun
The heart rate decreases
- C Kemoreseptor mengesan nilai pH darah meningkat
Chemoreceptors detect an increase in blood pH value
- D Otot interkosta mengecut dan mengendur dengan cepat
The intercostal muscles contract and relax rapidly

18. Antara yang berikut, yang manakah sendi bergerak sedikit?
Which of the following is slightly moveable joint?

A



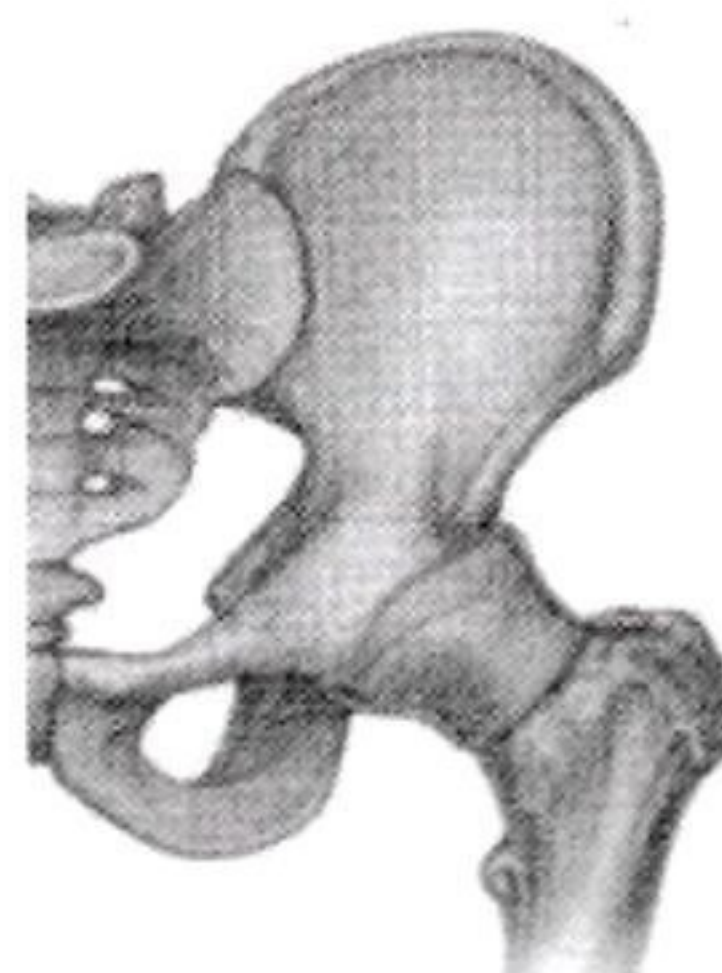
B



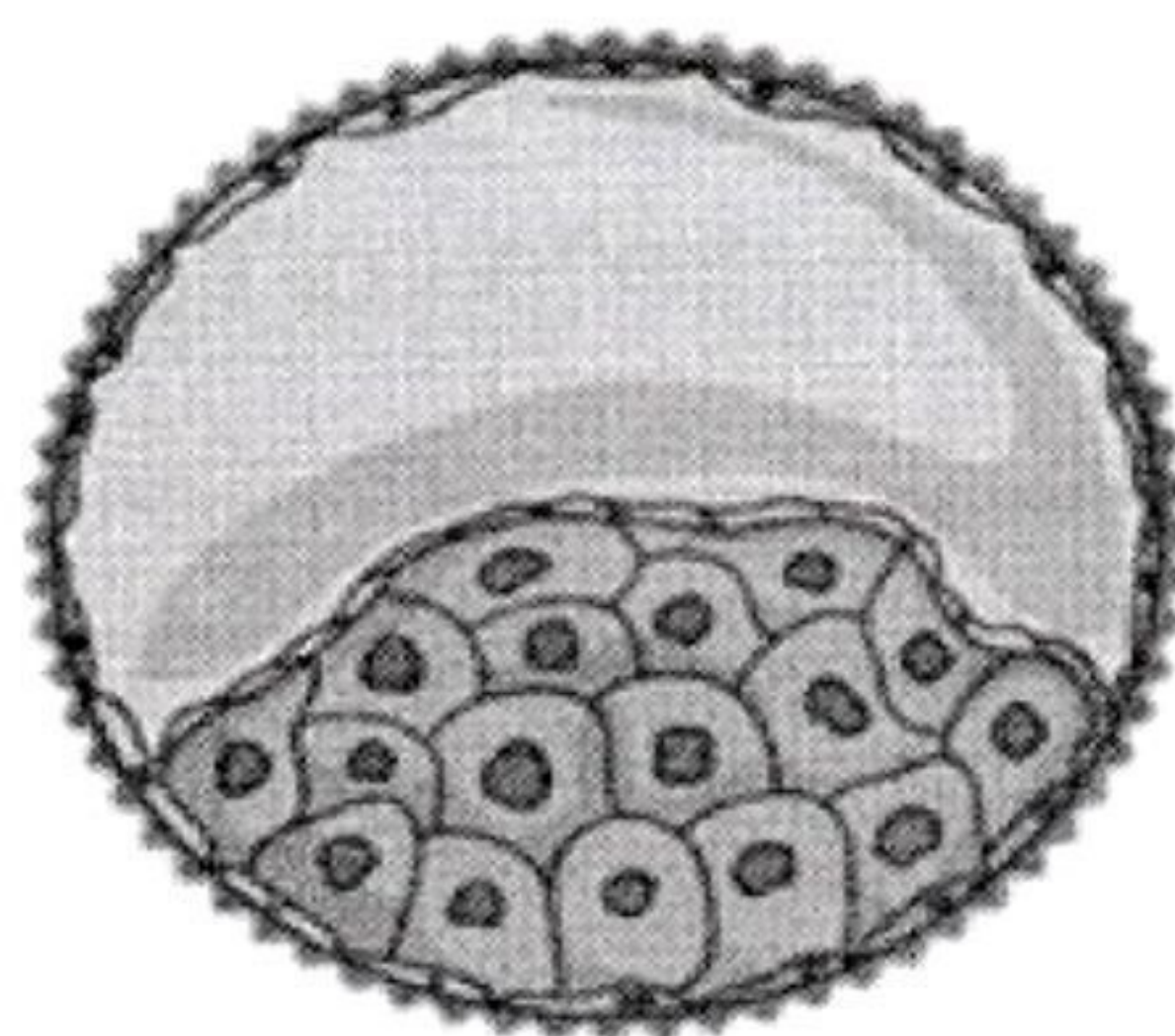
C



D

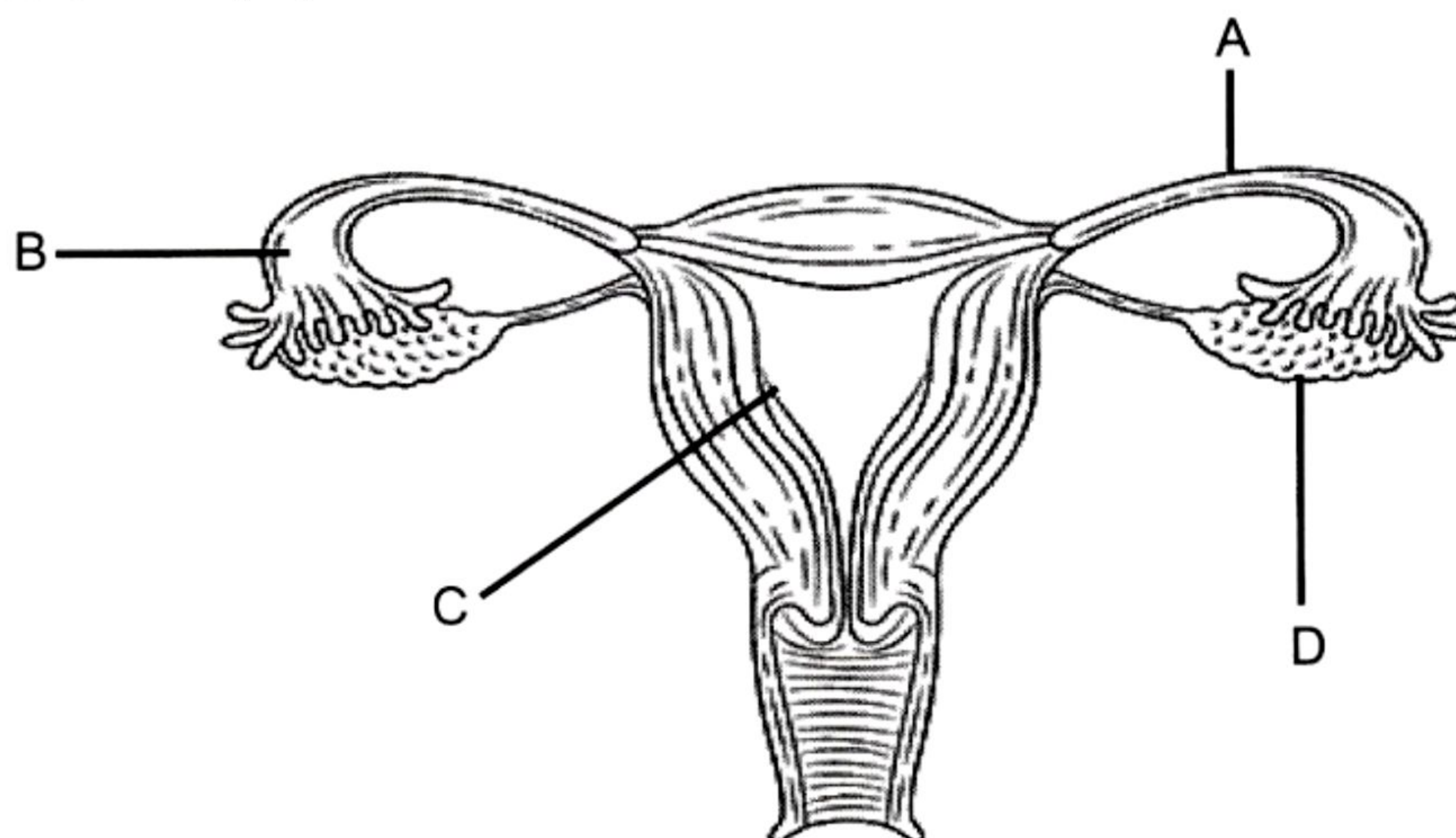


19. Rajah 13 menunjukkan satu struktur sewaktu perkembangan embrio.
Diagram 13 shows a structure during development of an embryo.

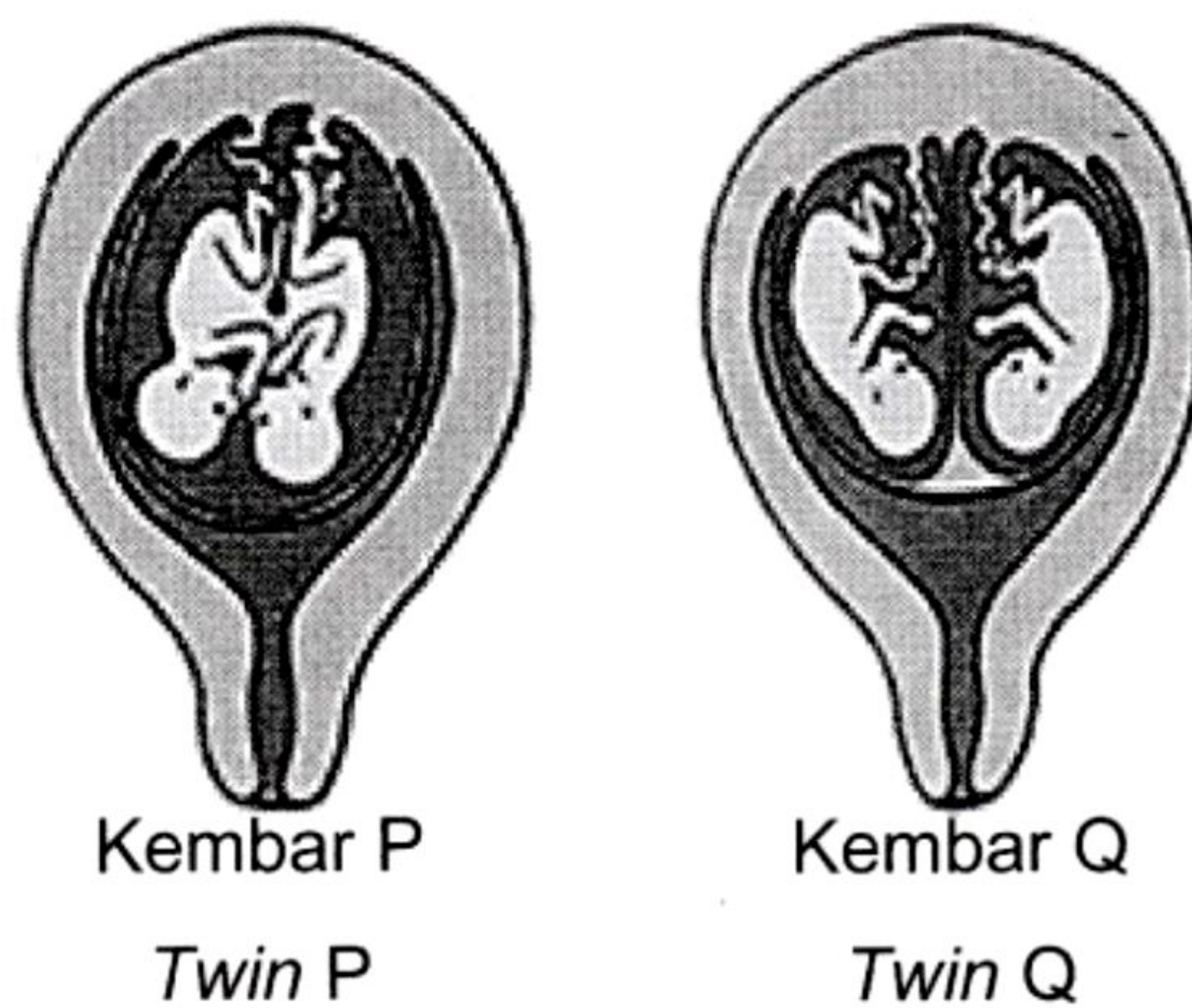


Rajah 13 / Diagram 13

Antara label A, B, C dan D, bahagian yang manakah struktur itu dijumpai?
Which part labels A, B, C or D the structure is found?



20. Rajah 14 menunjukkan dua jenis kembar.
Diagram 14 shows two types of twins.



Rajah 14 / Diagram 14

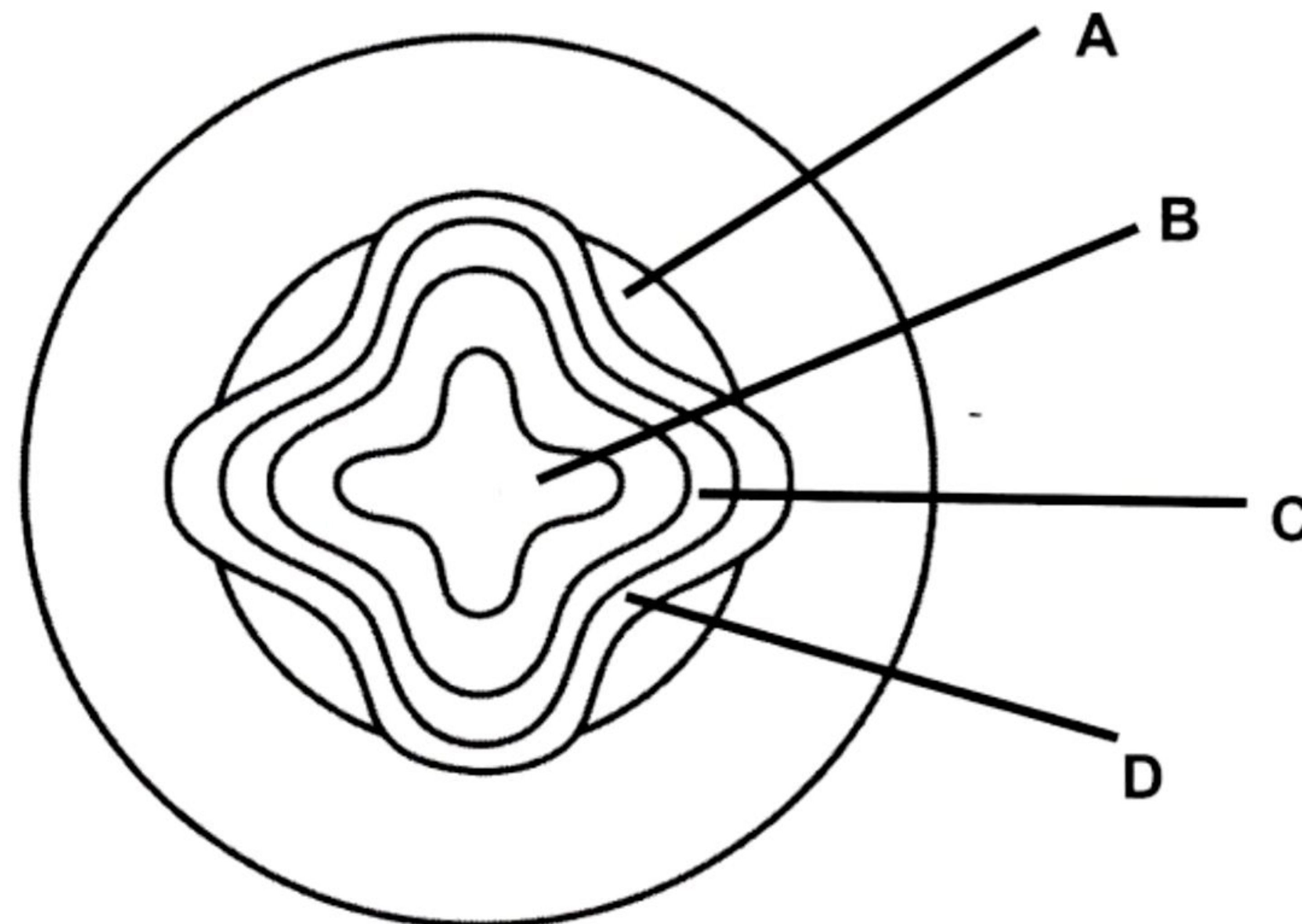
Antara yang berikut, ciri yang manakah membezakan kedua-dua jenis kembar tersebut?

Which of the following characteristic differentiates the two types of twins?

- A Mitosis lengkap atau tidak lengkap
Complete or incomplete mitosis
- B Kandungan genetik anak
Genetic content of the offspring
- C Bilangan plasenta
Number of placentae
- D Jenis jantina
Type of gender

21. Rajah 15 menunjukkan keratan rentas akar bagi suatu tumbuhan.

Diagram 15 shows a cross section of root in a plant.



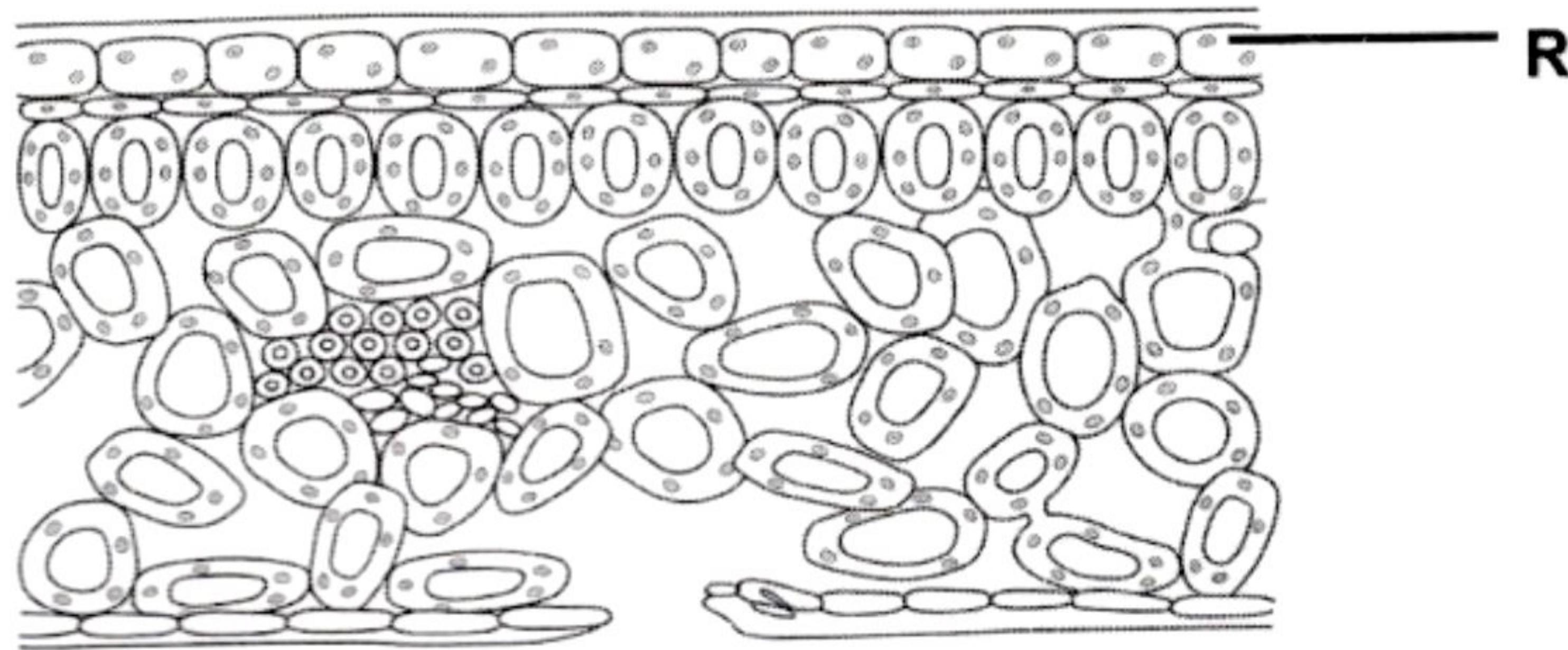
Rajah 15 / Diagram 15

Antara bahagian berlabel **A**, **B**, **C** dan **D**, yang manakah menunjukkan floem sekunder?

*Which part labelled **A**, **B**, **C** or **D** shows the secondary phloem?*

22. Rajah 16 menunjukkan keratan rentas bagi sehelai daun.

Diagram 16 shows a cross section of a leaf.



Rajah 16 / Diagram 16

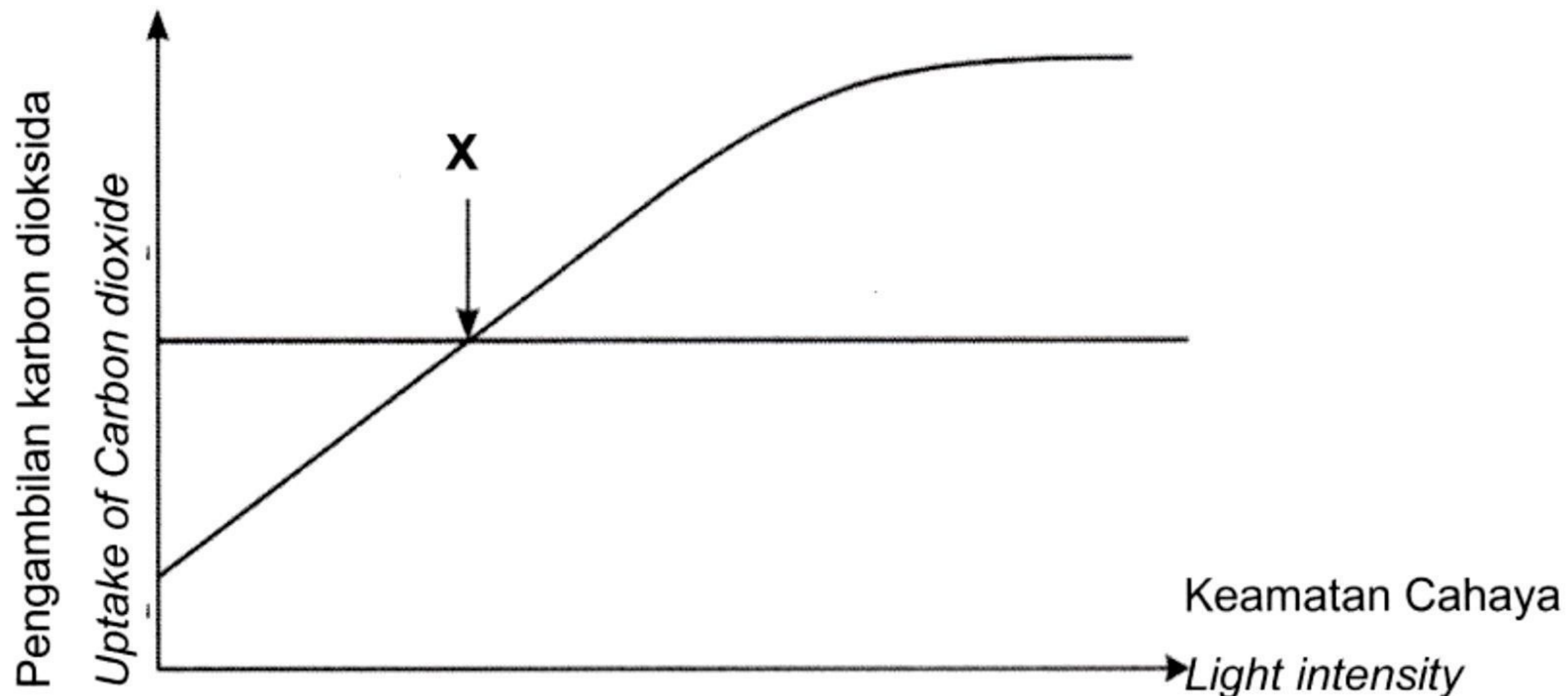
Antara yang berikut, pernyataan yang manakah betul tentang R?

Which of the following statement is correct about R?

- A Tidak mengandungi kloroplas
Does not contain chloroplast
- B Berbentuk tidak sekata
Has irregular shape
- C Tersusun secara tegak dan padat
Arranged vertically and closely-packed
- D Terdiri daripada sepasang sel pengawal
Consists of a pair of guard cells.

23. Rajah 17 ialah graf menunjukkan hubungan antara pengambilan karbon dioksida dengan keamatan cahaya bagi suatu tumbuhan.

Diagram 17 is a graph shows the relationship between carbon dioxide uptake and light intensity of a plant.



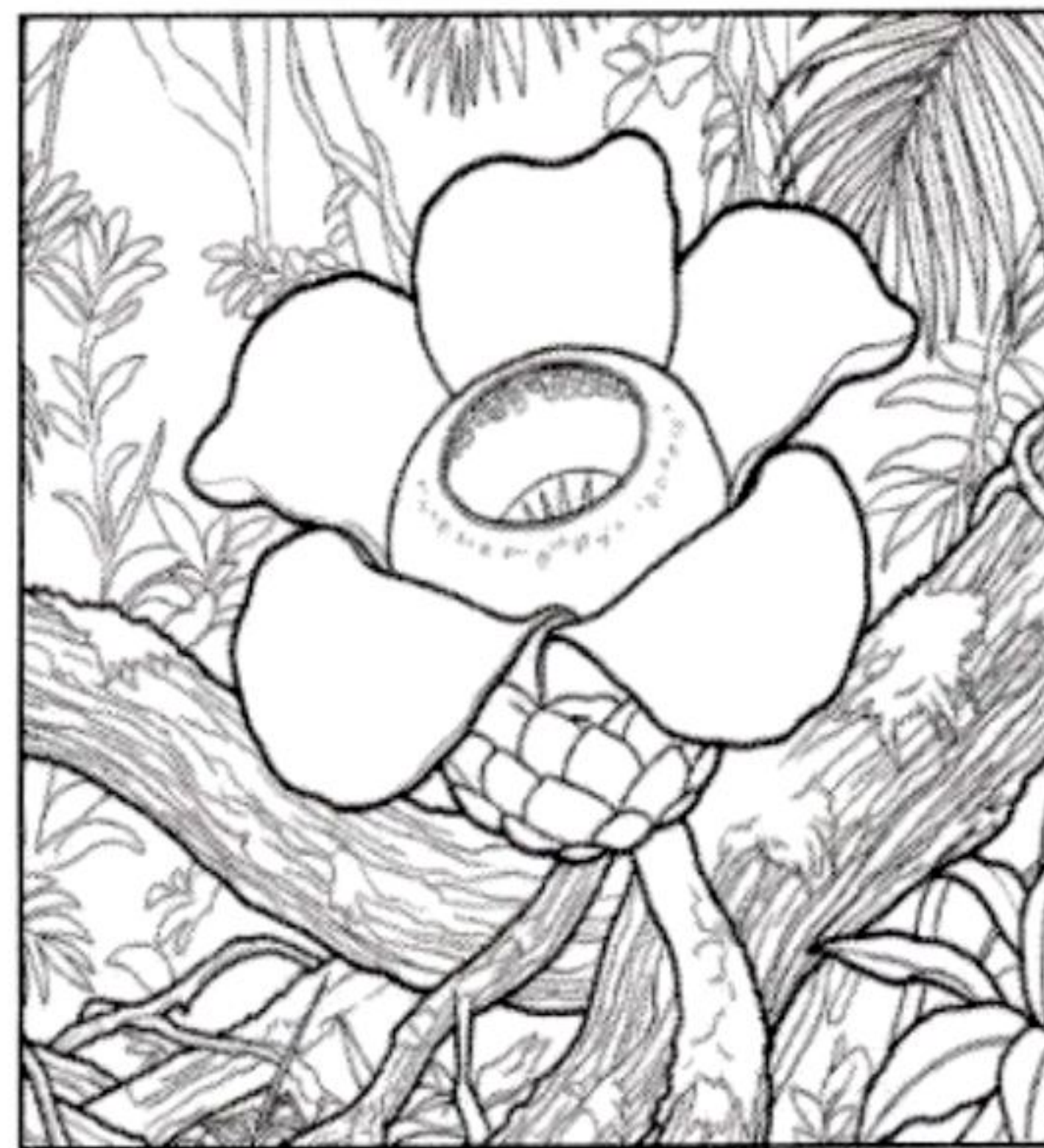
Rajah 17 / Diagram 17

Antara yang berikut, kesan yang manakah akan berlaku pada tumbuhan tersebut jika keamatan cahaya pada titik X kekal dalam tempoh seminggu?

Which of the following effects will occur to the plant if the light intensity at point X remains for a week?

- A Tumbuhan terus membesar kerana fotosintesis berlaku secara optimum
The plant continues to grow because photosynthesis occurs optimally
- B Tumbuhan kekal hidup dengan tidak menunjukkan sebarang pertambahan saiz atau jisim kering
The plant remains alive without showing any increase in size or dry mass
- C Tumbuhan akan mati secara berperingkat disebabkan simpanan makanan digunakan tanpa diganti.
The plant will gradually die because stored food is used up without being replaced

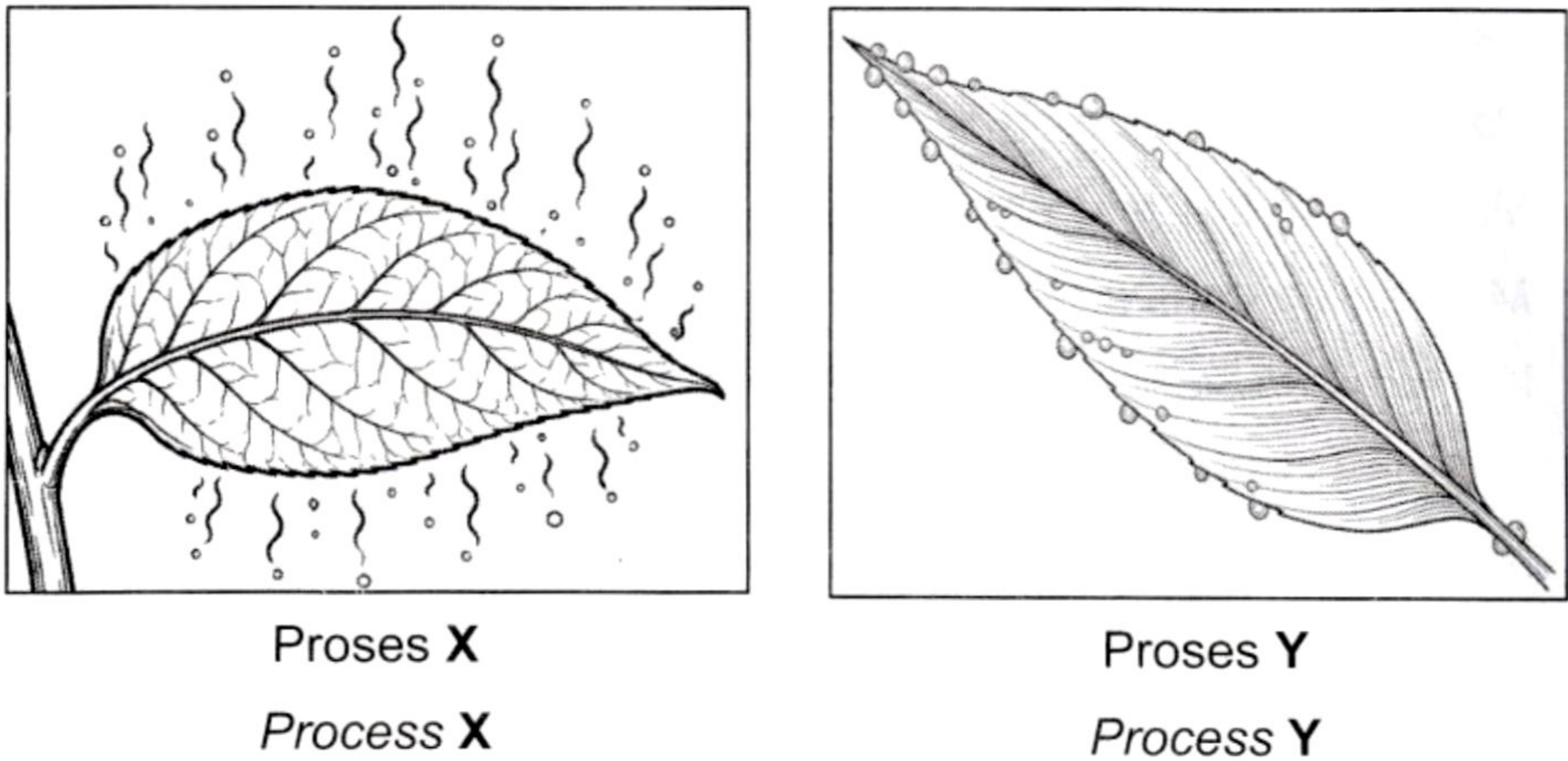
24. Antara yang berikut, makronutrien yang manakah terlibat dalam sintesis klorofil?
Which of the following macronutrients involved in synthesis of chlorophyll?
- A Kalium dan nitrogen
Potassium and nitrogen
 - B Magnesium dan kalsium
Magnesium and calcium
 - C Kalsium dan sulfur
Calcium and sulphur
 - D Nitrogen dan magnesium
Nitrogen and magnesium
25. Rajah 18 menunjukkan dua jenis tumbuhan.
Diagram 18 shows two types of plant.

**R****S**

Rajah 18 / Diagram 18

- Antara yang berikut, yang manakah menunjukkan persamaan bagi **R** dan **S**?
*Which of the following shows the similarity between **R** and **S**?*
- A Menyerap nutrien daripada tisu vaskular perumah
Absorbs nutrients from the host vascular tissue
 - B Menumpang pada pokok perumah
Living on a host tree
 - C Mempunyai batang yang bengkak
Has a swollen stem
 - D Menjalankan proses fotosintesis
Undergoes photosynthesis process

26. Rajah 19 menunjukkan dua keadaan daun yang mengalami proses yang berbeza.
Diagram 19 shows two conditions of leaves that undergoing different processes.

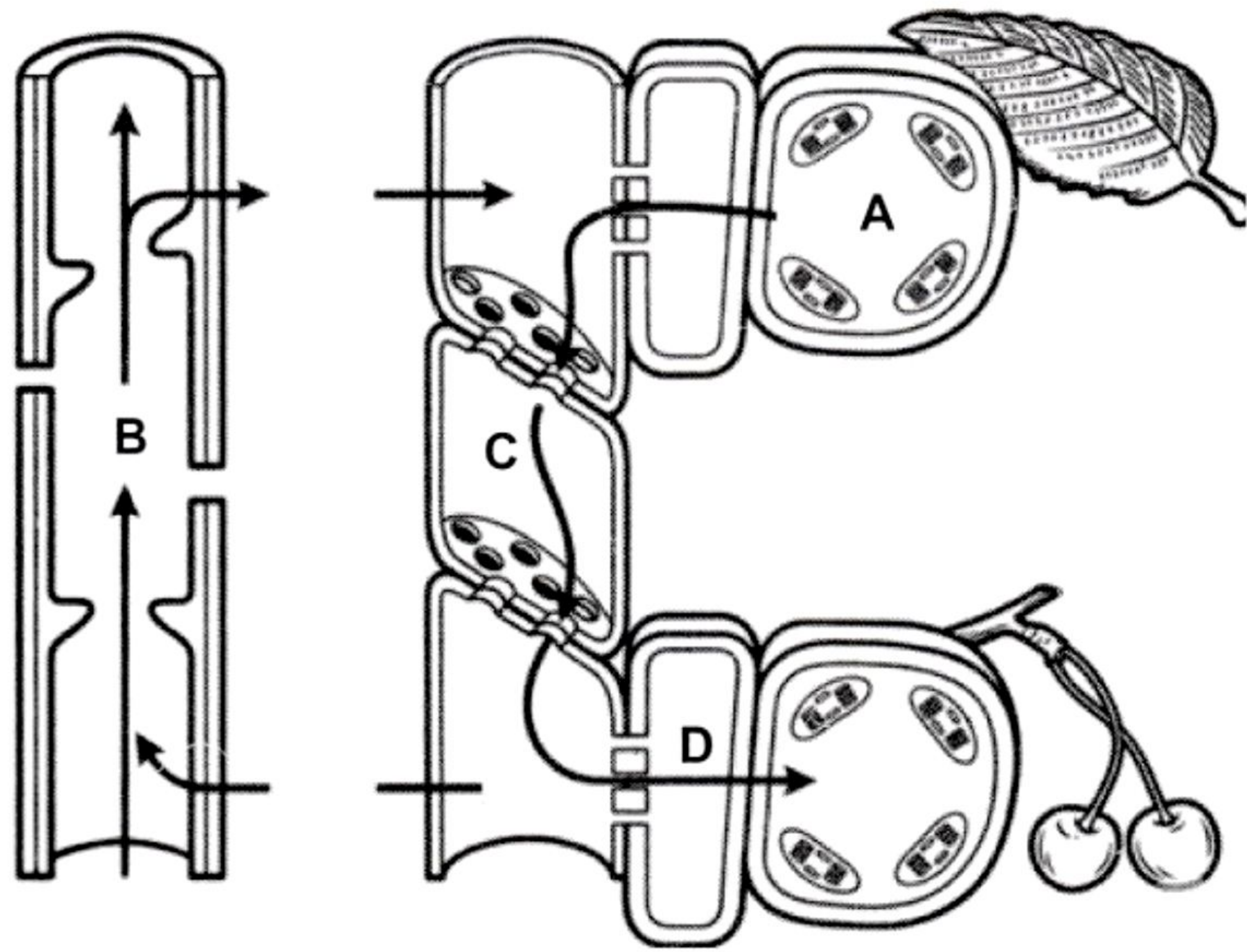


Rajah 19 / *Diagram 19*

Antara yang berikut, padanan yang manakah menunjukkan kepentingan proses X dan Y?
Which of the following pairs shows the importance of proces X and Y?

	Proses X <i>Process X</i>	Proses Y <i>Process Y</i>
A	Menyingkirkan bahan kumuh daripada tumbuhan <i>Removing waste substances from the plant.</i>	Mengangkut ion kalium dari akar ke daun <i>Transporting potassium ions from the roots to the leaves.</i>
B	Mengekalkan suhu optimum tumbuhan <i>Maintaining the plant's optimum temperature.</i>	Mengelakkan urat daun daripada pecah <i>Preventing the leaf veins from bursting.</i>
C	Mengelakkan jangkitan patogen pada daun <i>Preventing the infection of pathogen on the leaves</i>	Mempercepatkan pengangkutan air ke daun <i>Speed up the transportation of water to the leaves.</i>
D	Mengekalkan tekanan akar yang efektif. <i>Maintain the effective root pressure.</i>	Mengelakkan enzim ternyahasli pada keamatan cahaya yang tinggi. <i>Prevent the enzyme from denaturising at high intensity of light.</i>

27. Rajah 20 menunjukkan proses pengangkutan bahan dalam tumbuhan.
Diagram 20 shows the process of transporting substances in plants.



Rajah 20 / Diagram 20

Antara bahagian berlabel **A**, **B**, **C** dan **D**, yang manakah menunjukkan tekanan hidrostatik paling tinggi?
*Which part labelled **A**, **B**, **C**, or **D** shows the highest hydrostatic pressure?*

28. Maklumat berikut berkaitan gerak balas yang dilakukan oleh dua jenis pokok.
The following information is related to the responses carried out by two types of plants.

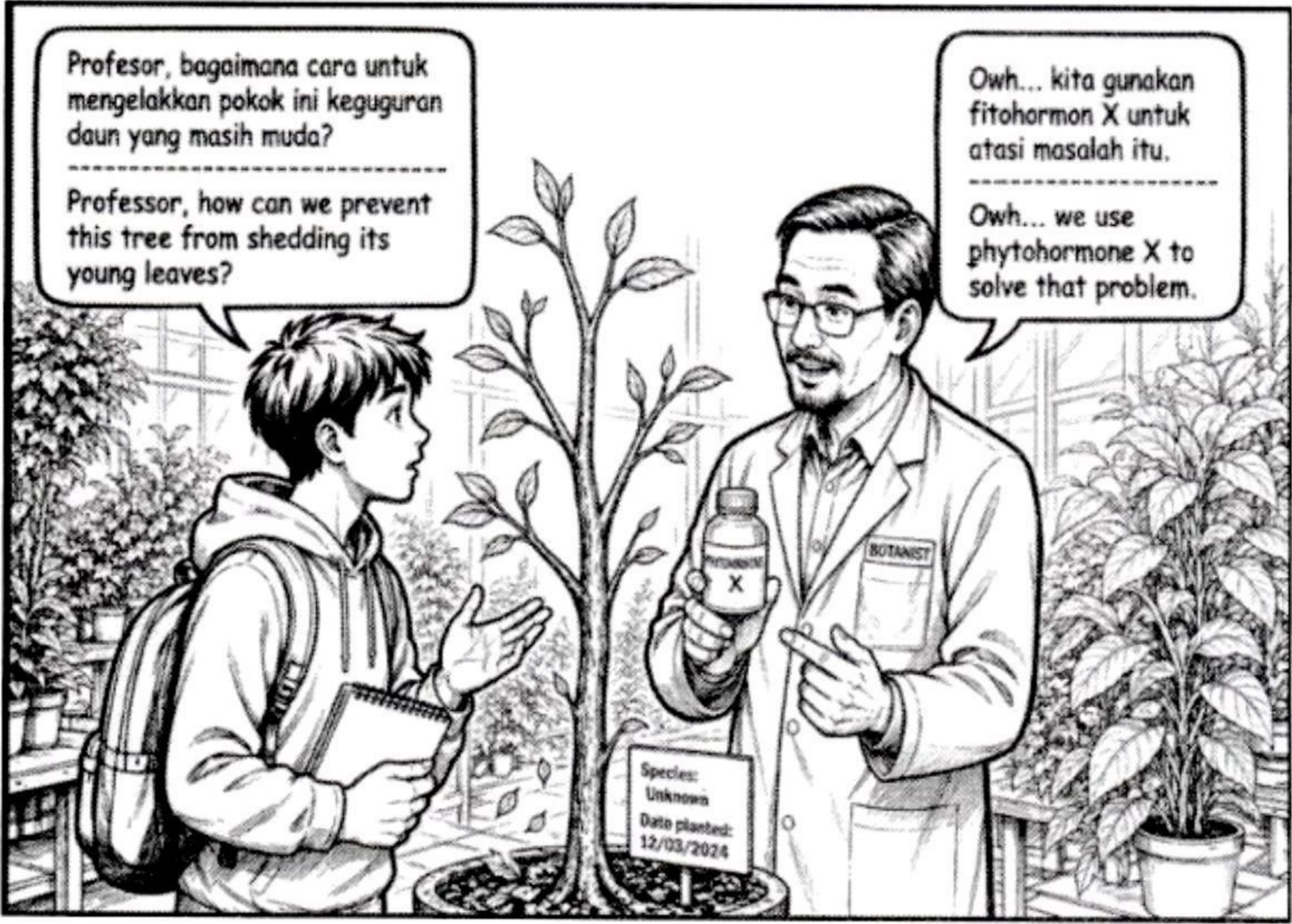
Pokok K <i>Plant K</i>	Bunga kembang mekar apabila suhu meningkat dan menguncup apabila suhu berkurang <i>The flower blooms when the temperature increases and closes when the temperature decreases</i>
Pokok L <i>Plant L</i>	Daun menguncup pada waktu malam dan terbuka pada waktu siang <i>The leaves fold at night and open during the day.</i>

Jadual 1 / Table 1

Apakah gerakbalas yang ditunjukkan oleh pokok K dan L?
What responses are shown by plants K and L?

	K	L
A	Seismonasti <i>Seismonasty</i>	Tigmonasti <i>Thigmonasty</i>
B	Niktinasti <i>Nyctinasty</i>	Termonasti <i>Thermonasty</i>
C	Termonasti <i>Thermonasty</i>	Niktinasti <i>Nyctinasty</i>
D	Tigmonasti <i>Thigmonasty</i>	Seismonasti <i>Seismonasty</i>

29. Rajah 21 menunjukkan perbualan antara seorang ahli botani dengan seorang pelajar.
Diagram 21 shows a conversation between a botanist and a student.

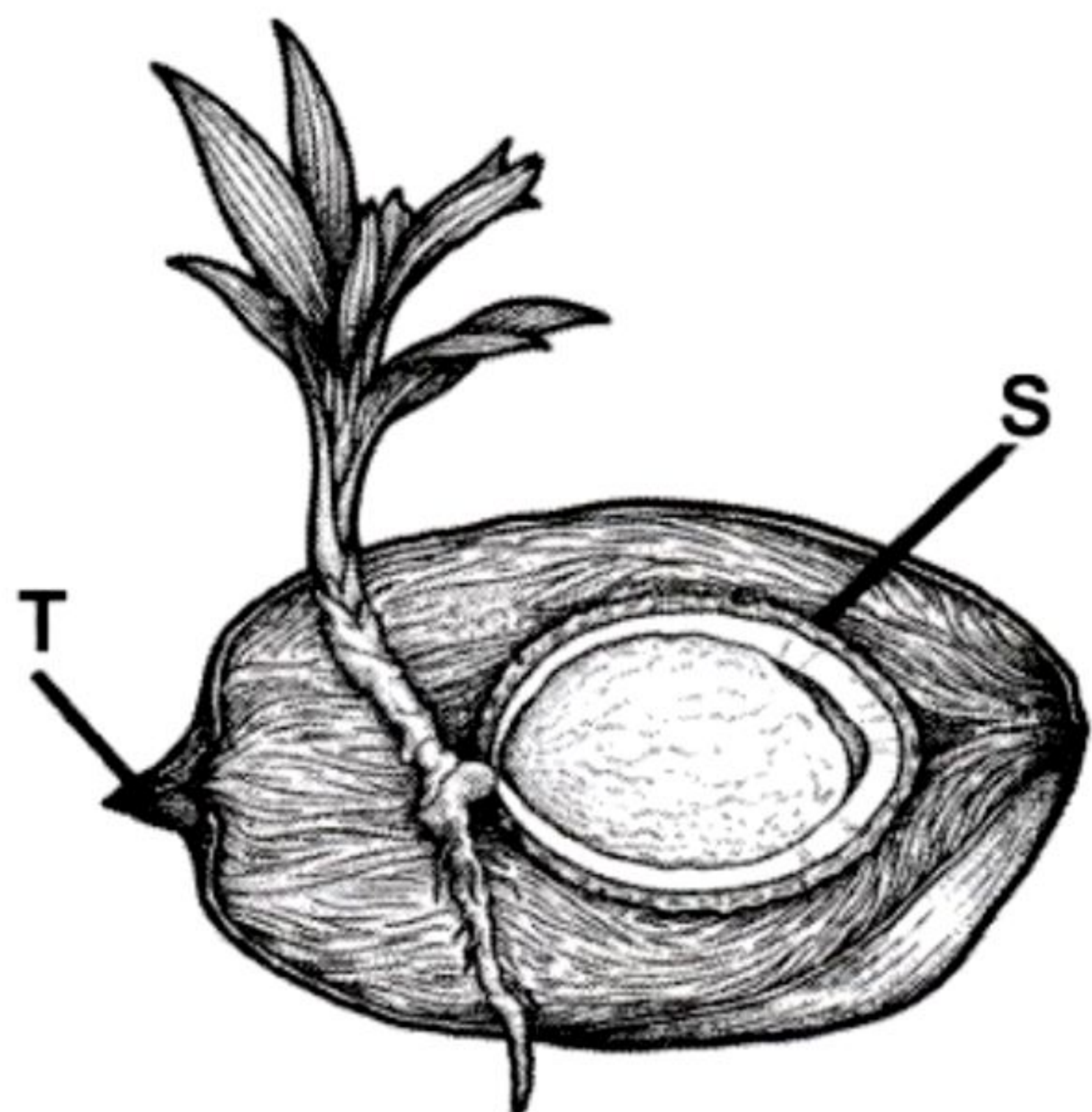


Rajah 21 / Diagram 21

Apakah fitohormon X?
What is phytohormone X?

- A Auksin
 Auxin
- B Giberelin
 Gibberellin
- C Sitokinin
 Cytokinin
- D Etilena
 Ethylene

30. Rajah 22 menunjukkan keratan rentas sebiji buah kelapa.
Diagram 22 shows a cross section of a coconut fruit.



Rajah 22 / *Diagram 22*

Antara yang berikut, bahagian pada bunga yang manakah menghasilkan **S** dan **T**?
*Which of the following flower parts produces **S** and **T**?*

	S	T
A	Ovari <i>Ovary</i>	Ovul <i>Ovule</i>
B	Stil <i>Style</i>	Ovari <i>Ovary</i>
C	Ovul <i>Ovule</i>	Stigma <i>Stigma</i>
D	Stigma <i>Stigma</i>	Stil <i>Style</i>

31. Maklumat berikut adalah tentang ciri daun bagi tumbuhan R.
The following information is about the characteristics of plant R.

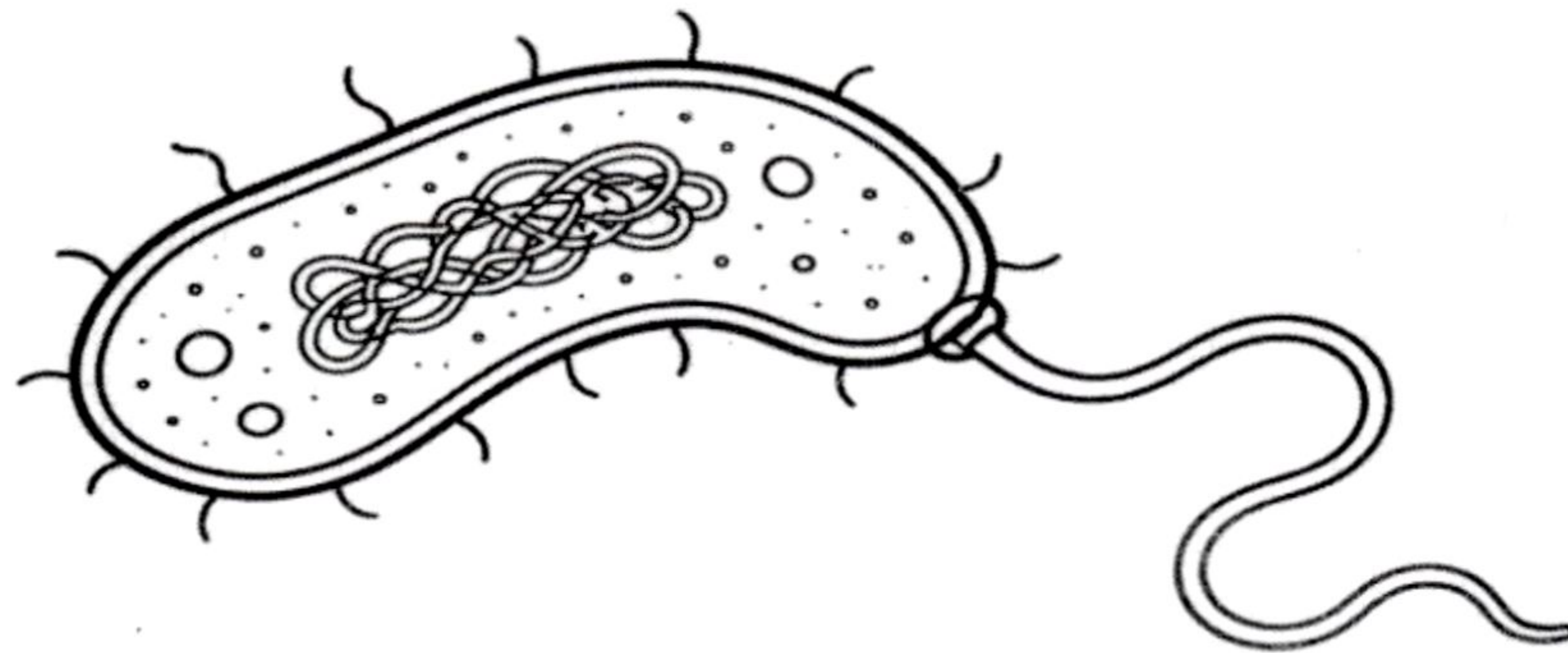
- Mempunyai kutikel tebal serta stoma yang terbenam.
Possesses a thick cuticle and sunken stomata
- Terdapat struktur khas yang dikenali sebagai hidatod.
Has specialised structures known as hydathodes

Apakah habitat bagi tumbuhan R?

What is the habitat of plant R?

- A Gurun
Desert
- B Tasik
Pond
- C Padang rumput
Grassland
- D Paya bakau
Mangrove swamp

32. Rajah 23 menunjukkan sejenis mikroorganisma.
Diagram 23 shows a type of microorganism.

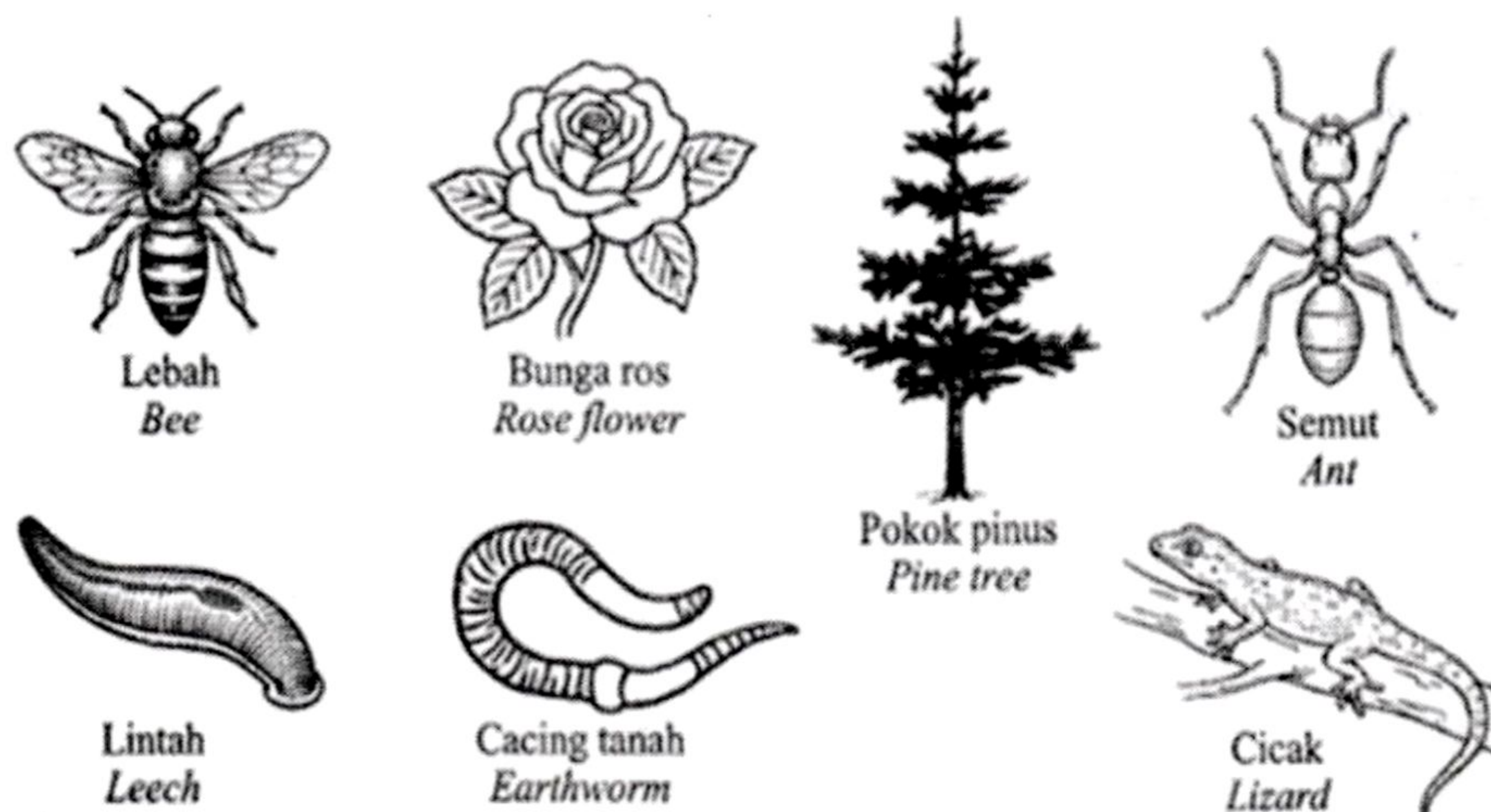


Rajah 23 / Diagram 23

Antara yang berikut, padanan yang manakah betul tentang mikroorganisma tersebut?
Which of the following matches is correct about the microorganism?

	Alam <i>Kingdom</i>	Bilangan sel <i>Number of cells</i>
A	Eubacteria	Unisel <i>Unicellular</i>
B	Protista	Multisel <i>Multicellular</i>
C	Archaeobacteria	Unisel <i>Unicellular</i>
D	Fungi	Multisel <i>Multicellular</i>

33. Rajah 24 menunjukkan kekunci dikotomi bagi organisma.
Diagram 24 shows a dichotomous key for the organisms.



		Kekunci dikotomi Dichotomous key
1a	Haiwan..... Animal	Rujuk 2 Go to 2
1b	Tumbuhan..... Plant	Rujuk 6 Go to 6
2a	Mempunyai kaki..... Has legs	Rujuk 3 Go to 3
2b	Tidak mempunyai kaki..... Does not have legs	Rujuk 5 Go to 5
3a	3 pasang kaki..... 3 pairs of legs	Rujuk 4 Go to 4
3b	2 pasang kaki..... 2 pairs of legs	A
4a	ada sayap..... has wings	Lebah Bee
4b	tiada sayap..... has no wings	B
5a	ada keta..... has chaeta	C
5b	Tidak mempunyai keta..... Does not have chaeta	D
6a	Tumbuhan berbunga..... Flowering plant	Bunga ros Rose
6b	Tumbuhan tidak berbunga..... Non-flowering plant	Pokok pinus Pine

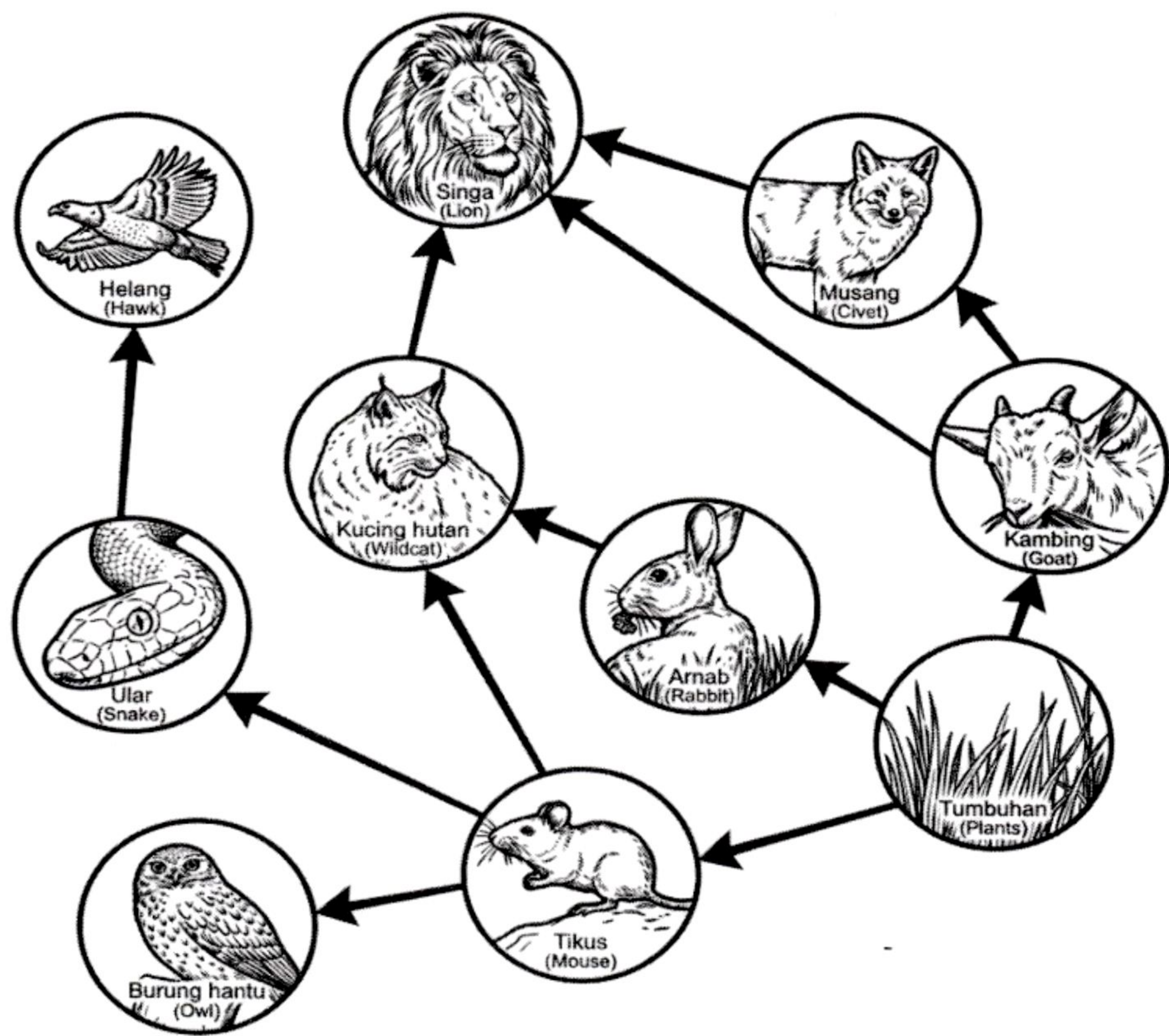
Rajah 24 / Diagram 24

Antara **A**, **B**, **C** dan **D** yang manakah mewakili lintah?

Which of the following **A**, **B**, **C** or **D** represent leech?



34. Rajah 25 menunjukkan jaringan makanan bagi suatu ekosistem.
Diagram 25 shows a food web for an ecosystem.



Rajah 25 / Diagram 25

Antara yang berikut, pernyataan yang manakah betul tentang interaksi antara organisma-organisma tersebut?

Which of the following statements is correct about the interactions between the organisms?

- A Jika populasi kambing meningkat, populasi tumbuhan juga akan meningkat
If the goat population increases, the plant population will also increase
- B Kucing hutan dan musang bersaing untuk arnab sebagai sumber makanan
Wild cats and foxes compete for rabbits as a food source
- C Singa merupakan satu-satunya pengguna tertier dalam siratan makanan ini
The lion is the only tertiary consumer in this food web
- D Tenaga yang diterima oleh helang adalah paling besar
The energy received by the eagle is the greatest

35. Jadual 2 menunjukkan keputusan eksperimen untuk menentukan tahap pencemaran air bagi tiga sampel air.

Table 2 shows the results of an experiment to determine the level of water pollution for three water samples.

Sampel air <i>Water samples</i>	Masa untuk melunturkan larutan metilena biru (Jam) <i>Time taken to decolourise methylene blue solution (Hour)</i>
X	10
Y	6
Z	2

Jadual 2 / Table 2

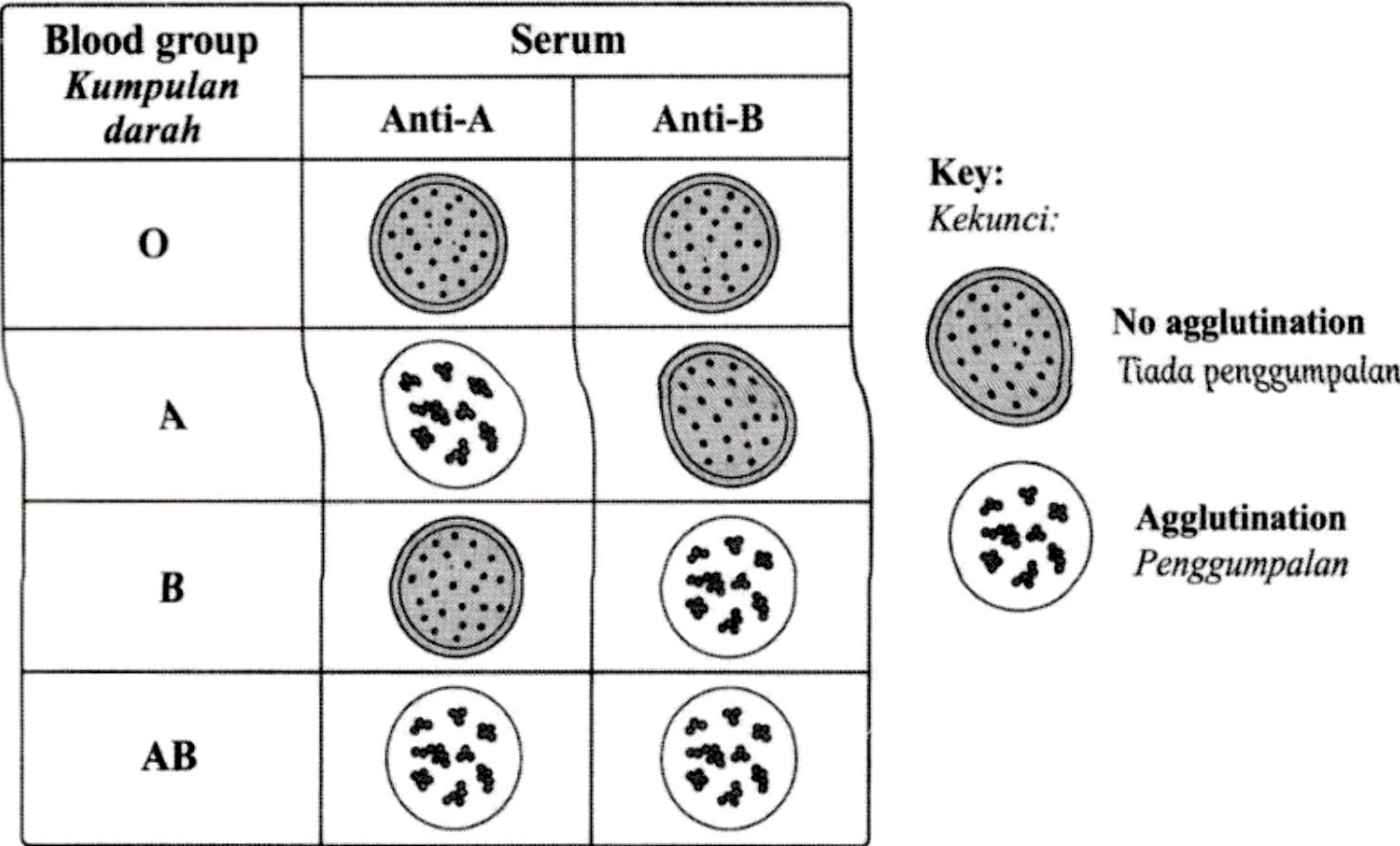
Antara yang berikut, pernyataan yang manakah betul?

Which of the following statements is correct?

- A Sampel air Z mempunyai kandungan oksigen terlarut yang paling rendah
Water sample Z has the lowest dissolved oxygen content
- B Sampel air X mempunyai nilai BOD lebih rendah berbanding sampel air Z
Water sample X has a lower BOD value compared to water sample Z
- C Sampel air Y mengandungi bakteria pengurai yang paling banyak
Water sample Y contains the highest number of decomposing bacteria
- D Sampel air X merupakan sampel air paling tercemar
Water sample X is the most polluted water sample

36. Rajah 26 menunjukkan keputusan ujian penggumpalan darah seorang pesakit yang memerlukan pemindahan darah segera.

Diagram 26 shows the results of a blood agglutination test of a patient who requires an immediate blood transfusion.



Rajah 26 / Diagram 26

Antara yang berikut, padanan yang manakah menunjukkan genotip kumpulan darah pesakit dengan genotip kumpulan darah penderma?

Which of the following pairs shows the blood group genotype of the patient and the blood group genotype of the donor?

	Pesakit <i>Patient</i>	Penderma <i>Donour</i>
A	I ^A I ^A	I ^A I ^B
B	I ^A I ^B	I ^O I ^O
C	I ^A I ^O	I ^A I ^A
D	I ^O I ^O	I ^B I ^B

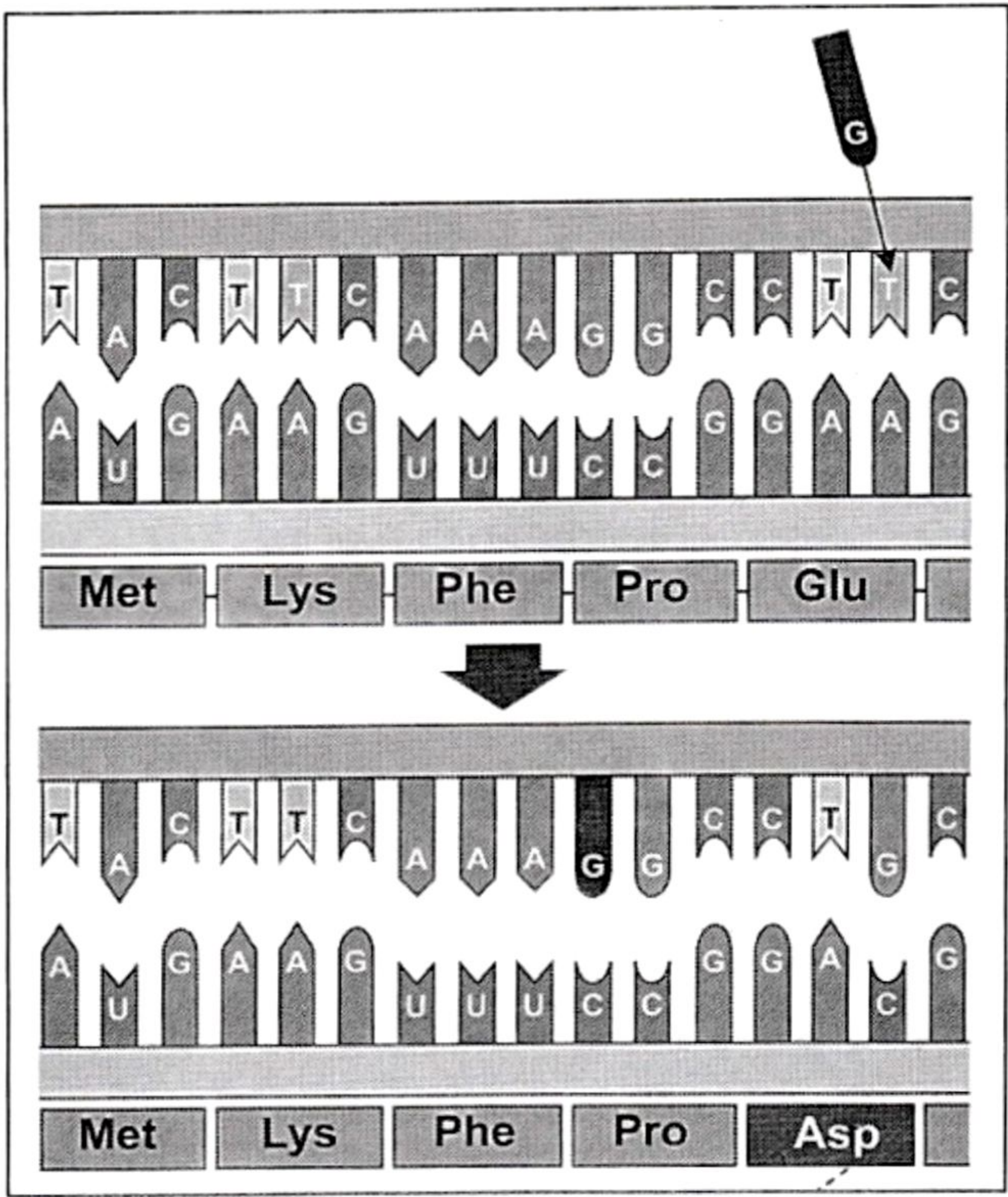
37. Dalam satu kajian tentang pewarisan sifat kucing, **T** mewakili alel dominan bagi ekor panjang, manakala **t** mewakili alel resesif bagi ekor pendek. Nisbah genotip bagi generasi F1 yang dihasilkan ialah **1 Tt : 1 tt**.

*In a study on the inheritance of traits in cats, **T** represents the dominant allele for a long tail, while **t** represents the recessive allele for a short tail. The genotype ratio of the F1 generation produced is **1 Tt : 1 tt**.*

Apakah genotip bagi induk jantan dan induk betina kucing tersebut?
What are the genotypes of the male parent and female parent cats?

	Induk jantan <i>Male parent</i>	Induk betina <i>Female parent</i>
A	TT	Tt
B	Tt	tt
C	TT	tt
D	Tt	Tt

38. Rajah 27 menunjukkan satu perubahan yang berlaku pada urutan bes nitrogen dalam DNA yang mengakibatkan asid amino yang berbeza telah dihasilkan.
Diagram 27 shows a change that occurs in the sequence of nitrogenous bases in DNA, resulting in the production of a different amino acid.



Rajah 27 / Diagram 27

Antara yang berikut, penyakit yang manakah disebabkan oleh perubahan ini?
Which of the following diseases is caused by this change?

- A Sistik fibrosis
 Sistic fibrocyst
- B Talasemia
 Thalassemia
- C Haemofilia
 Haemophilia
- D Anemia sel sabit
 Sickle cell anemia

39. Pernyataan berikut adalah tentang ciri-ciri bagi sejenis penyakit genetik X.
The following statements are about the characteristics of a genetic disease X.

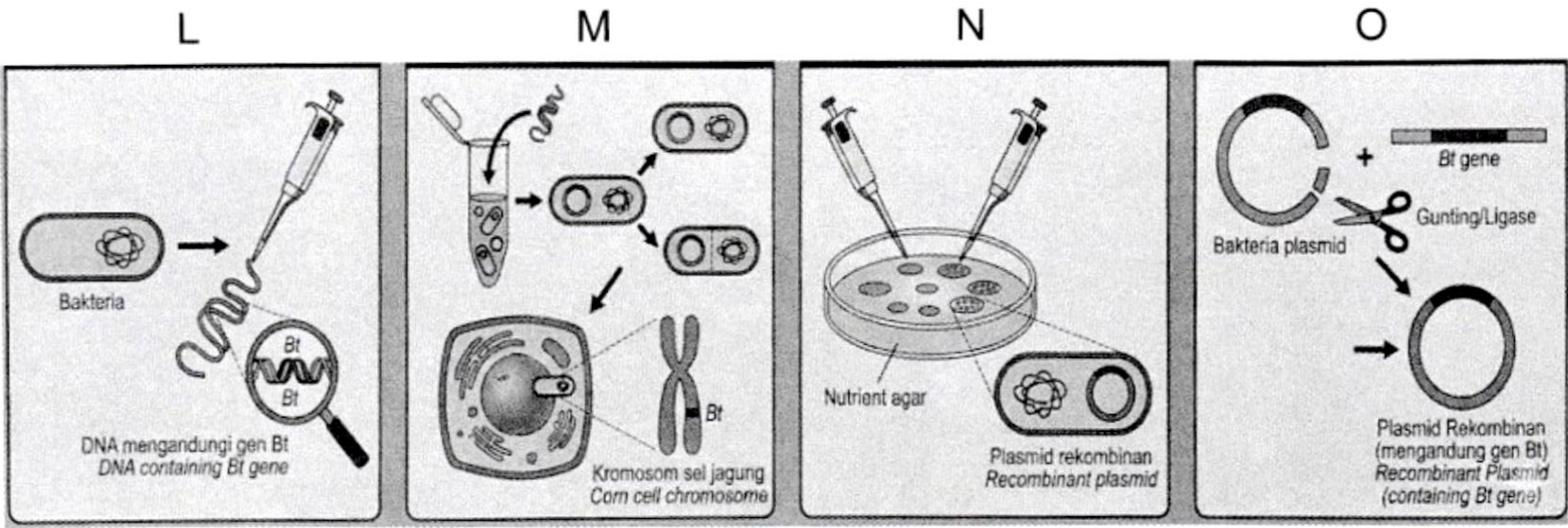
- Perempuan yang rendah
Short female
- Ovari tidak berkembang
Ovaries fail to develop
- Mempunyai leher yang berlipat
Has a webbed neck

Apakah penyakit X?

What is disease X?

- A Sindrom Down
Down syndrome
- B Sindrom Jacob
Jacob syndrome
- C Sindrom Turner
Turner syndrome
- D Sindrom Klinefelter
Klinefelter syndrome

40. Rajah 28 menunjukkan langkah-langkah dalam penghasilan jagung terubahsuai genetik.
Diagram 28 shows the steps in the production of genetically modified corn.



Rajah 28 / Diagram 28

Antara yang berikut, urutan langkah yang manakah betul?
Which of the following is the correct sequence of steps?

- A L, M, N, O
- B L, N, O, M
- C L, O, M, N
- D L, O, N, M

