

Jawab **semua** soalan.

*Answer **all** questions.*

1. Seorang ahli biologi membuat kajian tentang asid deoksiribonukleik (DNA). Ahli biologi yang manakah membuat kajian ini?

A biologist studies deoxyribonucleic acid (DNA). Which biologist study about this?

A. Ahli botani

Botanist

B. Pakar onkologi

Oncologist

C. Ahli ekologi

Ecologist

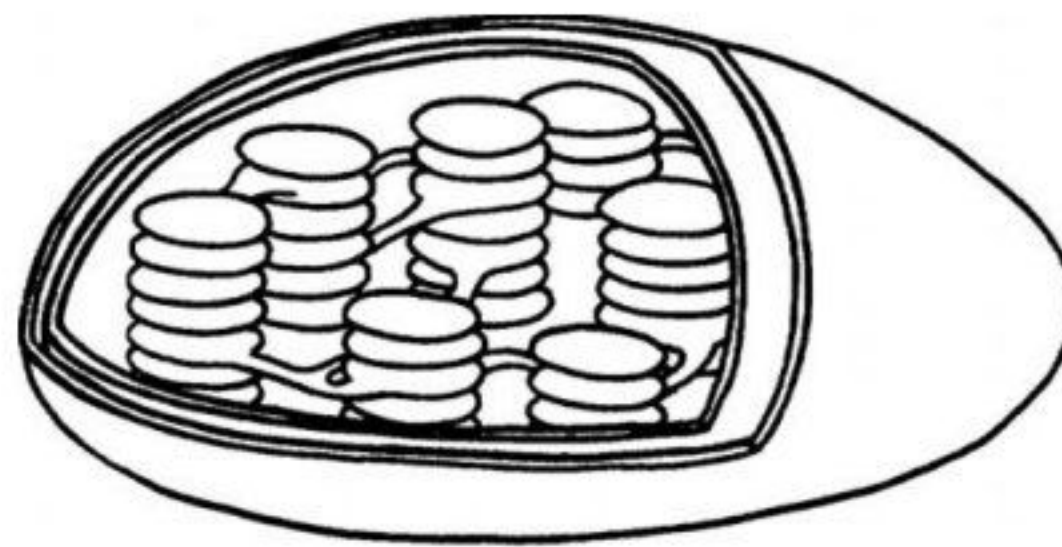
D. Pakar genetik

Geneticist

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2. Rajah 1 menunjukkan struktur satu komponen sel.

Diagram 1 shows the structure of an organelle.



Rajah 1

Diagram 1

Proses yang manakah berlaku di dalam komponen sel tersebut?

Which process occurred in that cell component?

A. Perkumuhan

Excretion

B. Fotosintesis

Photosynthesis

C. Respirasi

Respiration

D. Pencernaan

Digestion

3. Apakah yang akan berlaku sekiranya tidak terdapat sel goblet pada tisu epitelium salur pernafasan?

What will happen if there is no goblet cells in the epithelial tissue of the respiratory tract?

A. Tiada penyingkiran mukus

No expelling of mucus

B. Tiada pertambahan mukus

No increase in mucus

C. Tiada penghasilan mukus

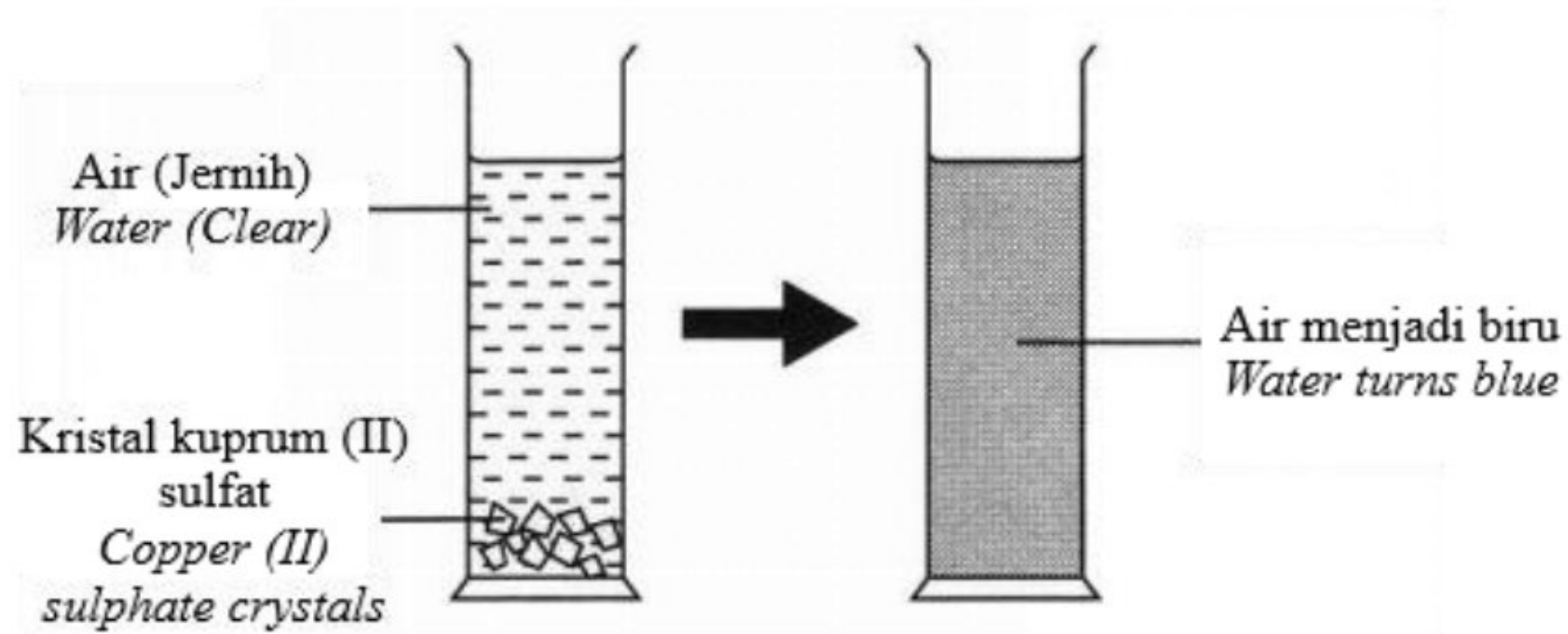
No production of mucus

D. Tiada pengurangan mukus

No decrease in mucus

4. Rajah 2 menunjukkan satu eksperimen.

Diagram 2 shows an experiment.



Rajah 2

Diagram 2

Apakah proses yang berlaku dalam eksperimen ini?

What is the process that occurs in the experiment?

- A. Pengangkutan aktif

Active transport.

- B. Resapan ringkas.

Simple diffusion.

- C. Resapan berbantu

Facilitated diffusion.

- D. Osmosis.

Osmosis

5.

Seorang pesakit yang mengalami dehidrasi diberikan larutan isotonik melalui titisan intravena oleh pegawai perubatan.

A dehydrated patient is given an isotonic solution via an intravenous drip by a medical officer.

Mengapakah larutan isotonik digunakan dalam situasi ini?

Why is isotonic solution used in this situation?

A. Supaya molekul air masuk ke dalam sel secara berlebihan dan menyebabkan sel meletus

To make sure water molecules enter the cell in excess and cause the cell to burst

B. Supaya sel menyerap glukosa dengan lebih cepat melalui osmosis

To make sure cell absorbs glucose more quickly through osmosis

C. Supaya tiada pergerakan bersih molekul air antara larutan dan sitoplasma sel

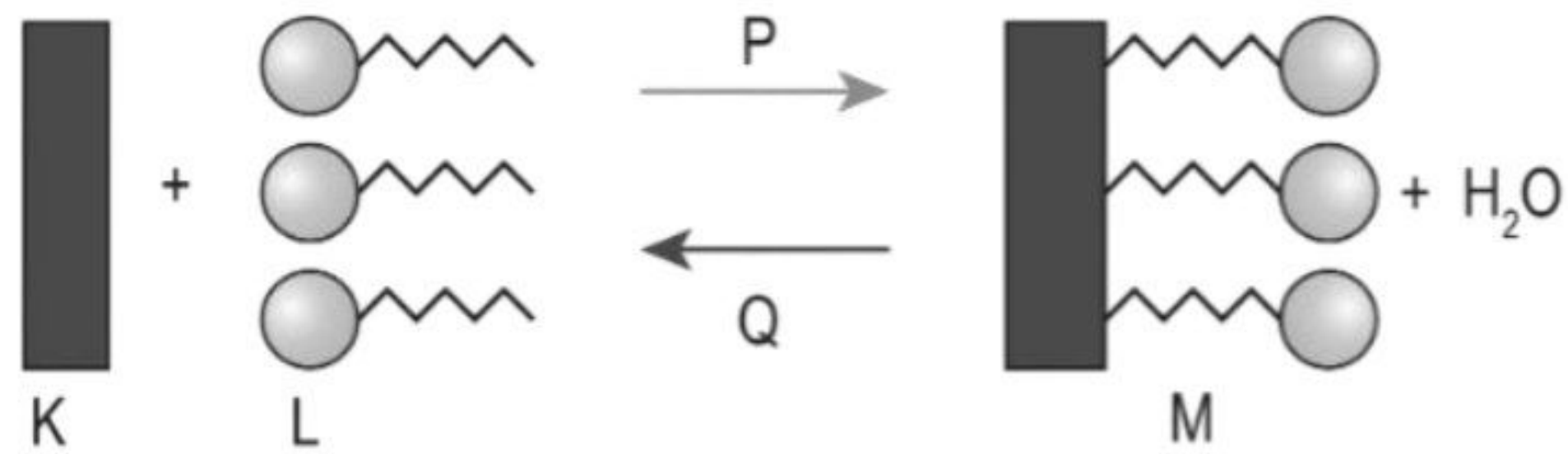
To make sure there is no net movement of water molecules between the solution and the cytoplasm of the cell

D. Supaya air keluar dari sel untuk mengimbangi kepekatan bendalir darah

To make sure water leaves the cell to balance the concentration of blood fluid

6. Rajah 3 menunjukkan pembentukan lipid.

Diagram 3 shows the formation of lipids.



Rajah 3

Diagram 3

Apakah P dan Q?

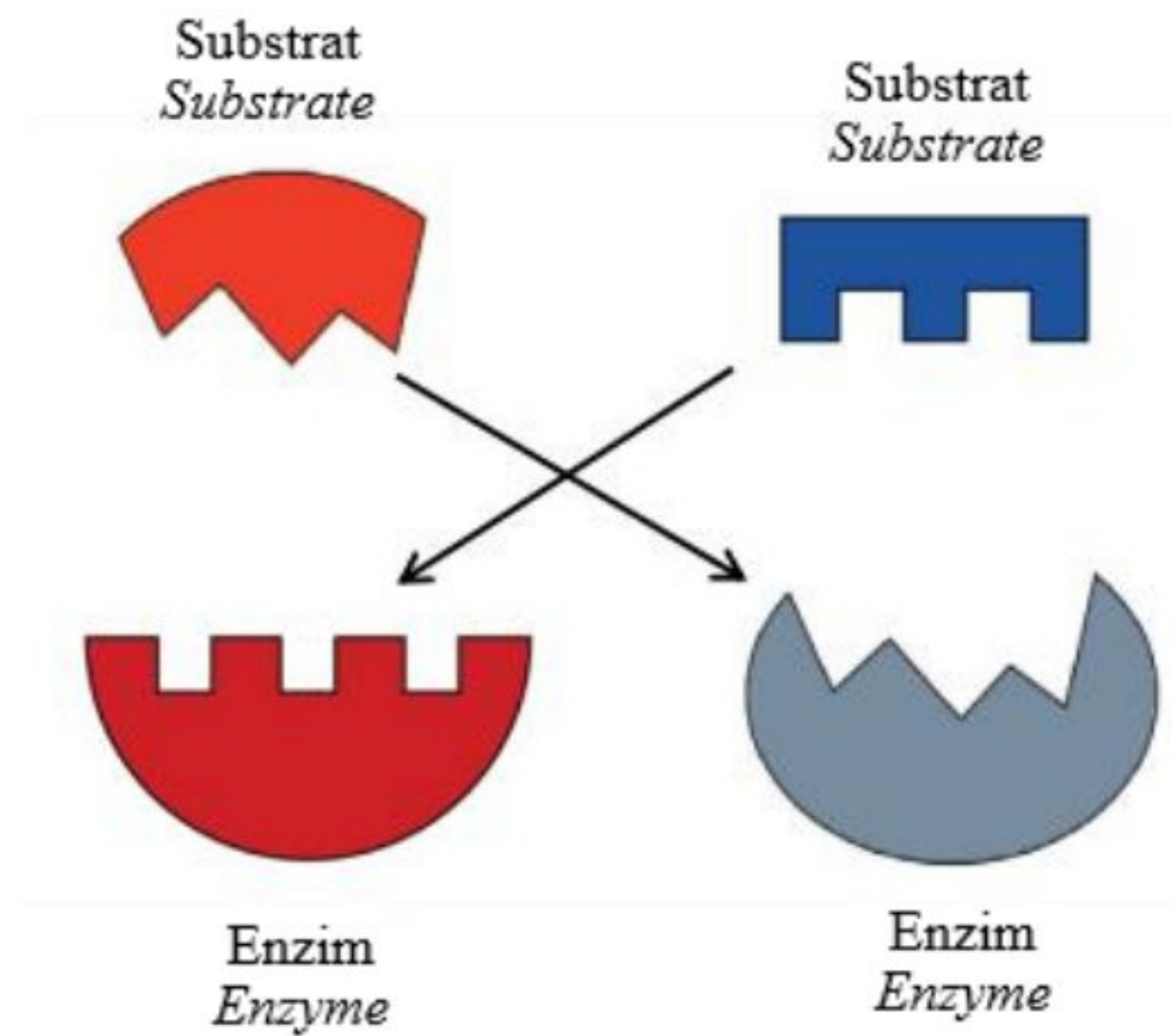
What are P and Q?

	P	Q
A.	Kondensasi <i>Condensation</i>	Hidrolisis <i>Hydrolysis</i>
B.	Hidrolisis <i>Hydrolysis</i>	Kondensasi <i>Condensation</i>
C.	Katabolisme <i>Catabolism</i>	Anabolisme <i>Anabolism</i>
D.	Anabolisme <i>Anabolism</i>	Katabolisme <i>Catabolism</i>

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7. Rajah 4 menunjukkan hipotesis 'mangga dan kunci' bagi tindakan enzim.

Diagram 4 shows the 'lock and key' hypothesis of enzyme action.



Rajah 4

Diagram 4

Berdasarkan rajah, apakah ciri yang ditunjukkan oleh enzim?

Based on the diagram, what characteristic does this enzyme show?

- A. Tindak balas enzim adalah berbalik

Enzyme reaction is reversible

- B. Tindak balas enzim adalah spesifik

Enzyme reaction is specific

- C. Tindak balas enzim dipengaruhi oleh suhu

Enzyme reaction is affected by temperature

- D. Enzim boleh diguna semula

Enzyme can be reused

8. Aktiviti enzim dalam salur pencernaan dipengaruhi oleh suhu. Antara yang berikut, apakah yang akan berlaku apabila seseorang mengalami demam panas?

Enzyme activity in the alimentary canal is affected by temperature. Which of the following will occur when someone has high fever?

A. Ketidakhadaman

Indigestion

B. Cirit-birit

Diarrhea

C. Gastritis

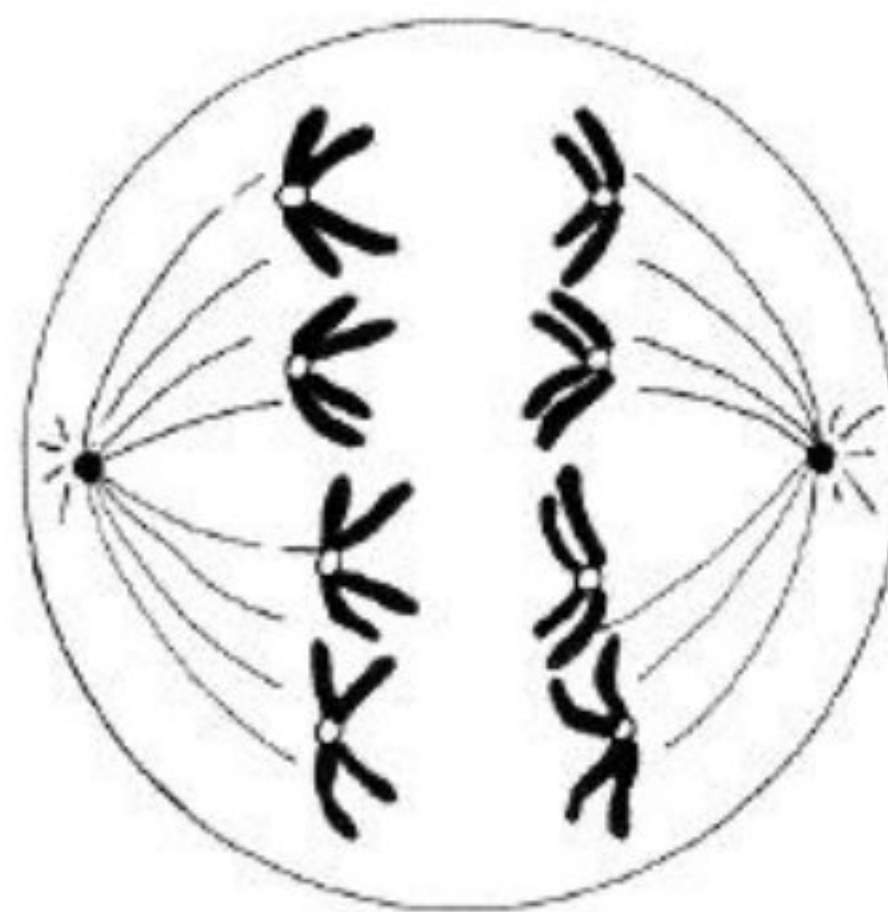
Gastric

D. Sembelit

Constipation

9. Rajah 5 menunjukkan satu fasa dalam pembahagian sel.

Diagram 5 shows a phase in the cell division.



Rajah 5

Diagram 5

Namakan fasa tersebut.

Name the phase.

A. Anafasa I

Anaphase I

B. Metafasa I

Metaphase I

C. Anafasa II

Anaphase II

D. Metafasa II

Metaphase II

10. Maklumat berikut menunjukkan ciri-ciri seorang kanak-kanak yang mengalami kecacatan genetik.

The following information shows the characteristics of a child with a genetic disorder.

- Mata sepet / *Slanted eyes*
- Lidah terjelir / *Protruding tongue*

Apakah punca kecacatan genetik ini?

What is the cause of this genetic disorder?

A. Sinapsis tidak berlaku semasa Profasa I

Synapsis did not occur during Prophase I

B. Sitokinesis tidak berlaku semasa Telofasa II

Cytokinesis did not occur during Telophase II

C. Kromatid kembar tidak terpisah semasa Anafasa II

Sister chromatids did not separate during Anaphase II

D. Kromosom tidak tersusun di satah khatulistiwa semasa Metafasa I

Chromosome did not line up at the equator during Metaphase I

11. Aktiviti yang manakah akan menyebabkan pengumpulan asid laktik di dalam otot?

Which activities will cause the accumulation of lactic acid in the muscles?

- I. Duduk di kerusi

Sit in the chair

- II. Maraton

Marathon

- III. Bermain badminton

Play badminton

- IV. Membaca buku

Read the book

- A. I dan III

I and III

- B. I dan IV

I and IV

- C. II dan III

II and III

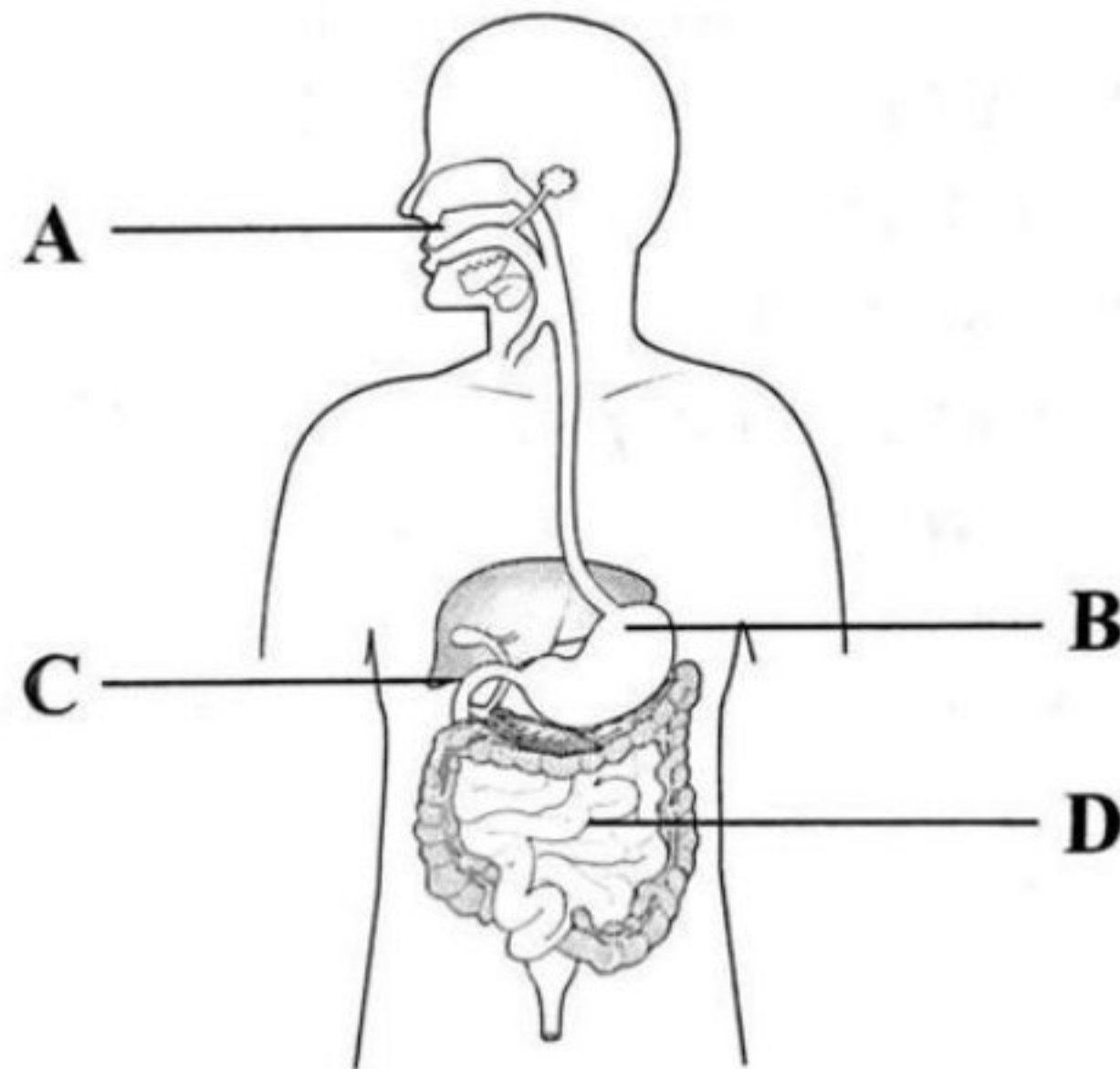
- D. II dan IV

II and IV

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14. Rajah 8 menunjukkan sistem pencernaan manusia.

Diagram 8 shows the human digestive system.



Rajah 8

Diagram 8

Antara bahagian berlabel A, B, C dan D, di manakah pencernaan protein bermula?

Which of the part labeled A, B, C and D, does the digestion of protein starts?

