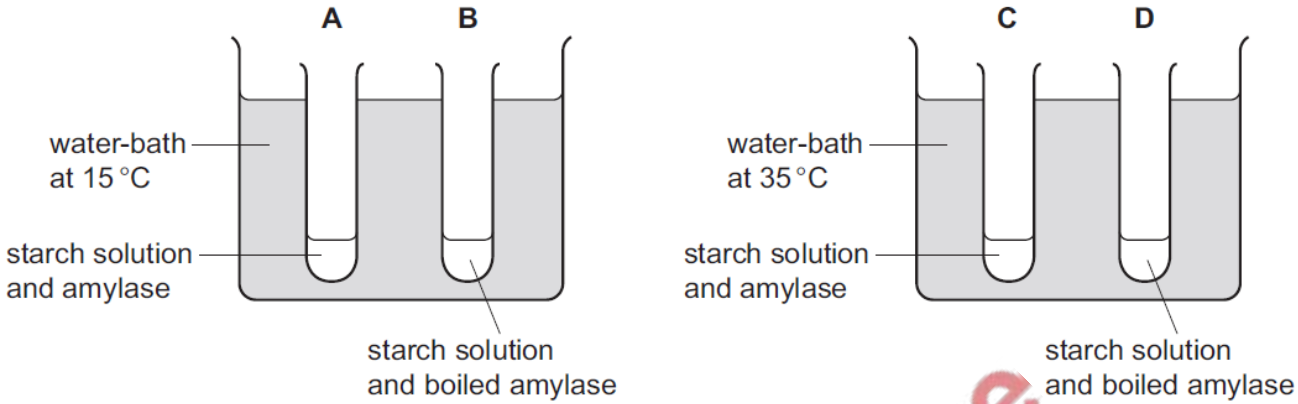
1. Nov/2021/Paper_11/No.11

Four test-tubes were set up as shown in the diagram.

In which test-tube is the starch digested most quickly?



2. Nov/2021/Paper_11/No.15

The diagram shows a large food molecule changing into smaller molecules.

What is process X?

A absorption

B chewing

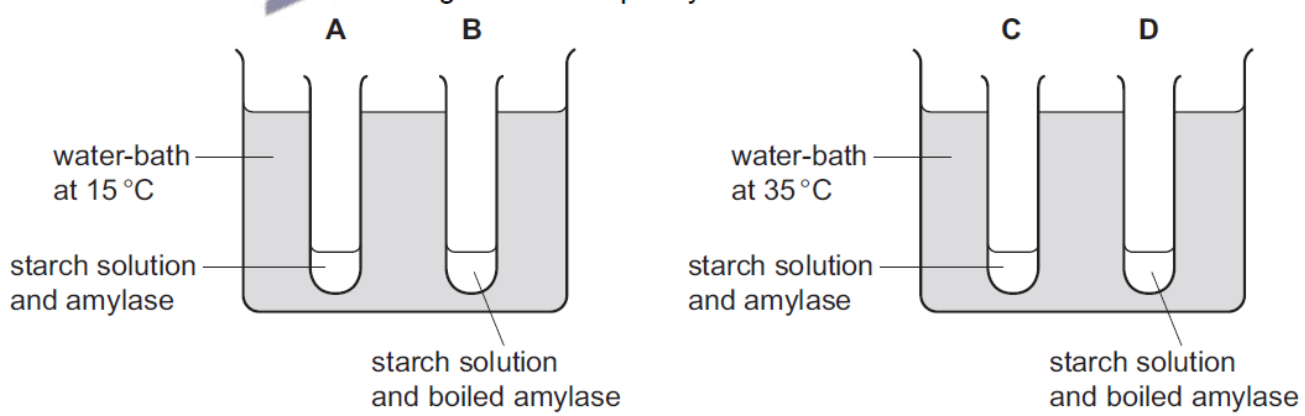
C digestion

D secretion

3. Nov/2021/Paper_12/No.11

Four test-tubes were set up as shown in the diagram.

In which test-tube is the starch digested most quickly?



4. Nov/2021/Paper_12/No.14

What is the dietary importance of carbohydrates?

A to promote healthy bones and teeth

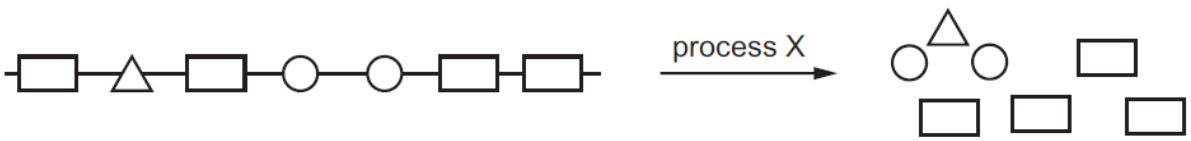
B to make fats

C to provide energy for the body

D to make proteins

5. Nov/2021/Paper_12/No.15

The diagram shows a large food molecule changing into smaller molecules.



What is process X?

A absorption

B chewing

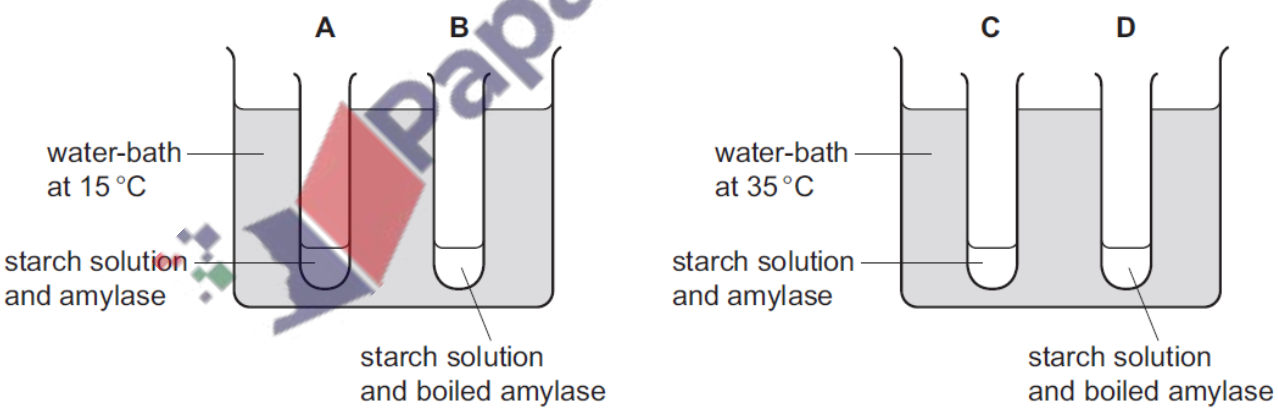
C digestion

D secretion

6. Nov/2021/Paper_13/No.11

Four test-tubes were set up as shown in the diagram.

In which test-tube is the starch digested most quickly?



7. Nov/2021/Paper_13/No.13

Which element is present in all amino acids?

A iron

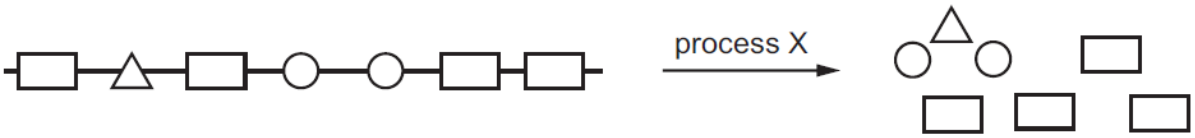
B magnesium

C calcium

D nitrogen

8. Nov/2021/Paper_13/No.15

The diagram shows a large food molecule changing into smaller molecules.



What is process X?

A absorption

B chewing

C digestion

D secretion

9. Nov/2021/Paper_21/No.2

Two animals have an identical sequence of amino acids in one of the proteins found in their cells.

What does this indicate about these animals?

A They have been eating the same types of food.

B They have not been exposed to substances that cause mutation.

C They must be members of the same genus.

D They share an ancestor.

10. Nov/2021/Paper_21/No.8

The bases on one of the strands of a DNA molecule have the sequence shown.

A-A-T-C-T-G

What is the corresponding sequence of bases on the other strand?

A A-A-T-C-T-G

B C-C-G-A-G-T

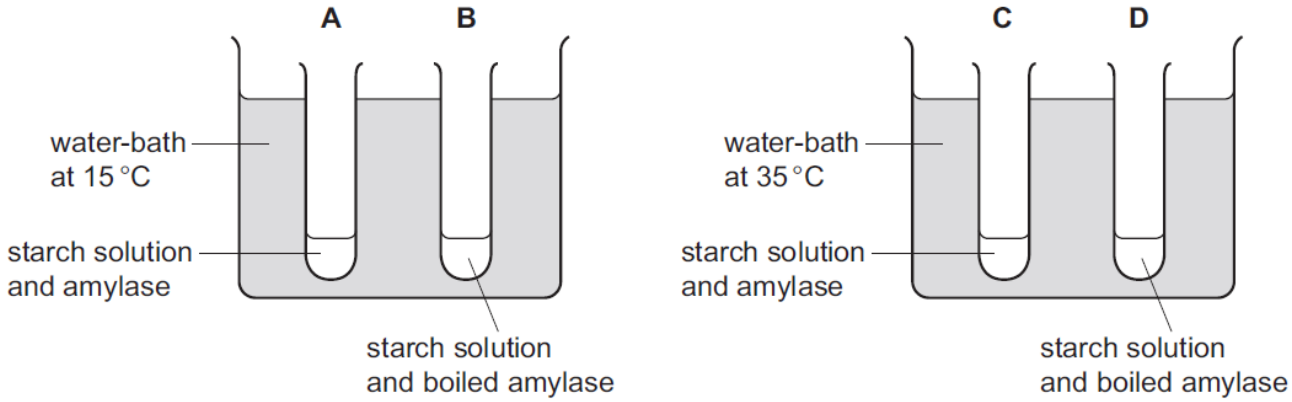
C G-G-C-T-C-A

D T-T-A-G-A-C

11. Nov/2021/Paper_21/No.11

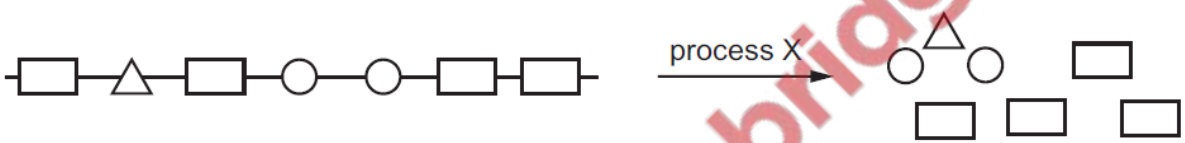
Four test-tubes were set up as shown in the diagram.

In which test-tube is the starch digested most quickly?



12. Nov/2021/Paper_21/No.15

The diagram shows a large food molecule changing into smaller molecules.



What is process X?

A absorption

B chewing

C digestion

D secretion

13. Nov/2021/Paper_22/No.2

Two animals have an identical sequence of amino acids in one of the proteins found in their cells.

What does this indicate about these animals?

A They have been eating the same types of food.

B They have not been exposed to substances that cause mutation.

C They must be members of the same genus.

D They share an ancestor.

14. Nov/2021/Paper_22/No.8

The bases on one of the strands of a DNA molecule have the sequence shown.

A-A-T-C-T-G

What is the corresponding sequence of bases on the other strand?

A A-A-T-C-T-G

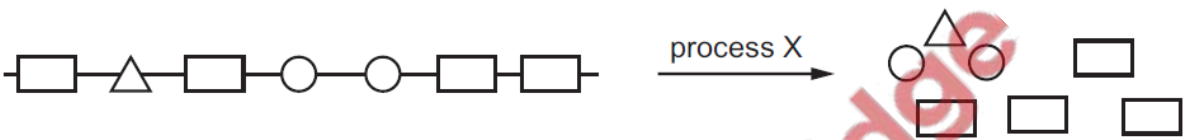
B C-C-G-A-G-T

C G-G-C-T-C-A

D T-T-A-G-A-C

15. Nov/2021/Paper_22/No.15

The diagram shows a large food molecule changing into smaller molecules.



What is process X?

A absorption

B chewing

C digestion

D secretion

16. Nov/2021/Paper_23/No.2

Two animals have an identical sequence of amino acids in one of the proteins found in their cells.

What does this indicate about these animals?

A They have been eating the same types of food.

B They have not been exposed to substances that cause mutation.

C They must be members of the same genus.

D They share an ancestor.

17. Nov/2021/Paper_23/No.8

The bases on one of the strands of a DNA molecule have the sequence shown.

A-A-T-C-T-G

What is the corresponding sequence of bases on the other strand?

A A-A-T-C-T-G

B C-C-G-A-G-T

C G-G-C-T-C-A

D T-T-A-G-A-C

18. Nov/2021/Paper_23/No.32

Which structures in bacterial cells synthesise proteins?

A cell wall

B chloroplasts

C nucleus

D ribosomes

19. Nov/2021/Paper_43/No.1

Enzymes are used in genetic engineering.

(a) Define the term enzyme.

.....

.....

..... [2]

(b) The process of genetic engineering often starts with the steps shown in Fig. 1.1.

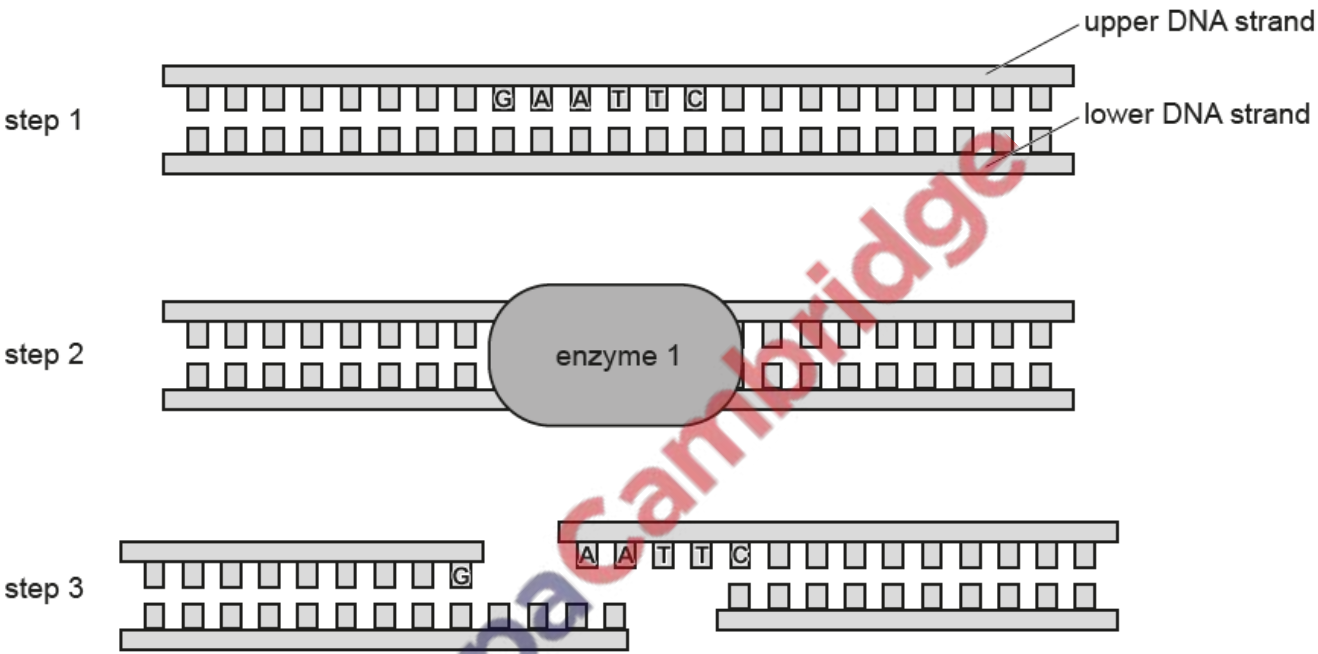


Fig. 1.1

(i) State the sequence of bases on the lower strand of the DNA molecule in step 1.

upper DNA strand	G	A	A	T	T	C
lower DNA strand						

[1]

(ii) State the name of enzyme 1 in step 2 of Fig. 1.1.

..... [1]

(iii) Describe the effect of enzyme 1 on the DNA molecule in step 3.

.....

.....

.....

.....

..... [2]

(iv) Explain how enzyme 1 in Fig. 1.1 is specific to the exact sequence of DNA bases.

.....

.....

.....

.....

..... [2]

(c) Another enzyme, enzyme 2, is used **later** in the process of genetic engineering.

Fig. 1.2 is a diagram showing the action of enzyme 2.

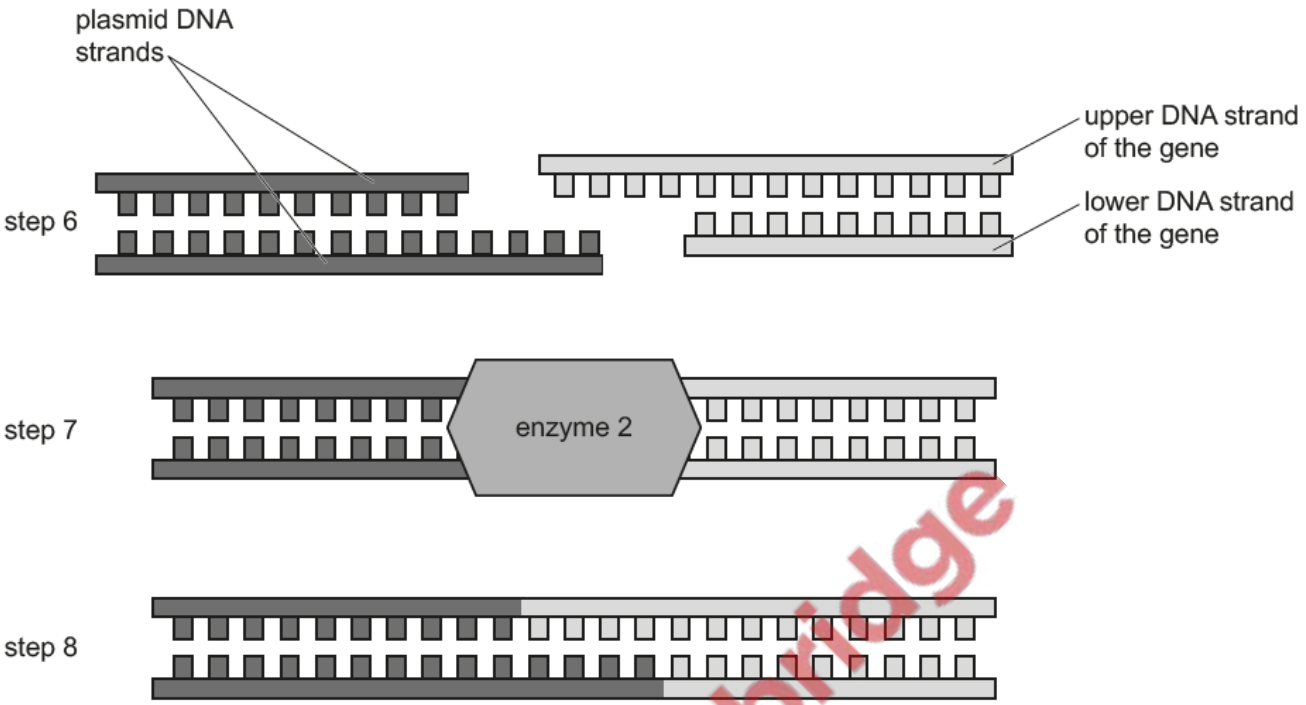


Fig. 1.2

(i) Some organisms naturally contain DNA in the form of a plasmid.

State the name of the type of organism that naturally contains plasmids.

..... [1]

(ii) State the name of enzyme 2 in step 7 of Fig. 1.2.

..... [1]

(iii) State the name of the molecule formed in step 8.

..... [1]

(d) Sketch a graph to describe how the activity of the enzymes used in genetic engineering would change if the reaction occurred at a range of temperatures from very cold to very hot.

Label the axes with appropriate titles.

Do **not** use units or a numbered scale.

[3]

[Total: 14]