CAMBRIDGE IGCSE BIOLOGY · 0610

BIOLOGY



EXAM QUESTION PACK

TOPIC 4: BIOLOGICAL MOLECULES

SCORE	PERCENTAGE
/	%

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Biological molecules – 2023 November IGCSE 0610

1. Nov/2023 /Paper_ 0610/11/No.8

What is the colour change shown by Benedict's solution when heated with a reducing sugar?

A blue to purple

B blue to red

C brown to blue-black

D red to yellow

2. Nov/2023 /Paper_ 0610/13/No.8

Which row shows the chemical elements contained in fats?

	carbon	hydrogen	nitrogen	oxygen
A	✓	✓	✗	✓
B	✓	✗	✓	✗
C	✗	✓	✓	✓
D	✓	✓	✗	✗

key

✓ = present

✗ = absent

3. Nov/2023 /Paper_ 0610/13/No.9

Glycogen is a large molecule made from smaller molecules.

Which smaller molecules is glycogen made from?

A amino acids

B fatty acids

C glucose

D glycerol

4. Nov/2023 /Paper_ 0610/21/No.8

What is the colour change shown by Benedict's solution when heated with a reducing sugar?

A blue to purple

B blue to red

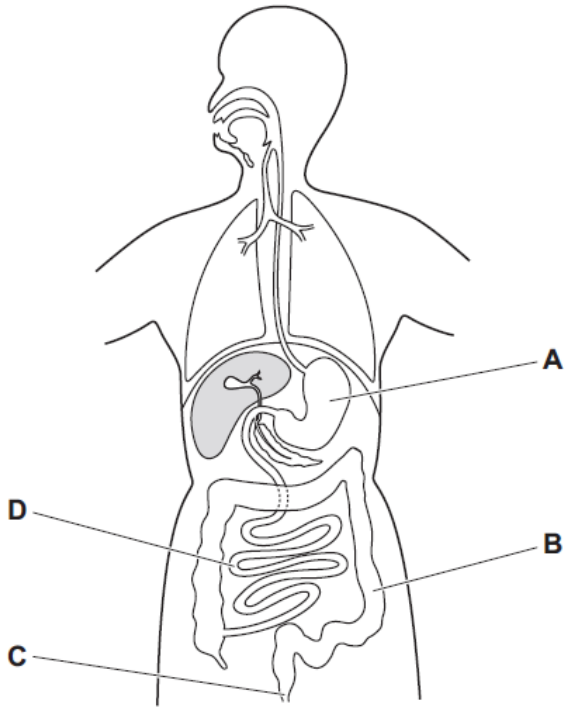
C brown to blue-black

D red to yellow

5. Nov/2023 /Paper_ 0610/21/No.9

The diagram shows the digestive system.

Which part absorbs the most water?



6. Nov/2023 /Paper_ 0610/22/No.8

Which row identifies the chemical elements in proteins?

	carbon	hydrogen	oxygen	nitrogen
A	✓	✓	✓	✓
B	✓	✗	✓	✗
C	✗	✓	✓	✓
D	✓	✓	✗	✗

key

✓ = present

✗ = absent

7. Nov/2023 /Paper_ 0610/22/No.9

The table shows some large biological molecules and some small biological molecules.

	large biological molecules	small biological molecules
1	cellulose	glucose
2	oil	amino acids
3	glycogen	glucose
4	protein	ethanol

Which rows correctly pair large molecules with the smaller molecules used to make them?

A 1 and 2 **B** 1 and 3 **C** 2 and 3 **D** 3 and 4

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8. Nov/2023 /Paper_ 0610/22/No.14

Some medicines are made into tablets which are coated in a starch-like substance.

The coating protects the medicine from the effects of gastric juice.

Which enzyme digests the coating and what is produced by this action?

	enzyme	products
A	amylase	fatty acids and glycerol
B	amylase	simple reducing sugars
C	lipase	fatty acids and glycerol
D	lipase	simple reducing sugars

9. Nov/2023 /Paper_ 0610/23/No.8

Which row shows the chemical elements contained in fats?

	carbon	hydrogen	nitrogen	oxygen
A	✓	✓	✗	✓
B	✓	✗	✓	✗
C	✗	✓	✓	✓
D	✓	✓	✗	✗

key

✓ = present

✗ = absent

10. Nov/2023 /Paper_ 0610/23/No.9

Glycogen is a large molecule made from smaller molecules.

Which smaller molecules is glycogen made from?

A amino acids

B fatty acids

C glucose

D glycerol

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11. Nov/2023 /Paper_ 0610/31/No.8(c _ e)

The protein pectinase is used in food industries to make fruit juice clear.

(c) Pectinase is an example of a type of protein.

State the name of this type of protein.

..... [1]

(d) Fig. 8.2 shows the process used to produce clear fruit juice.

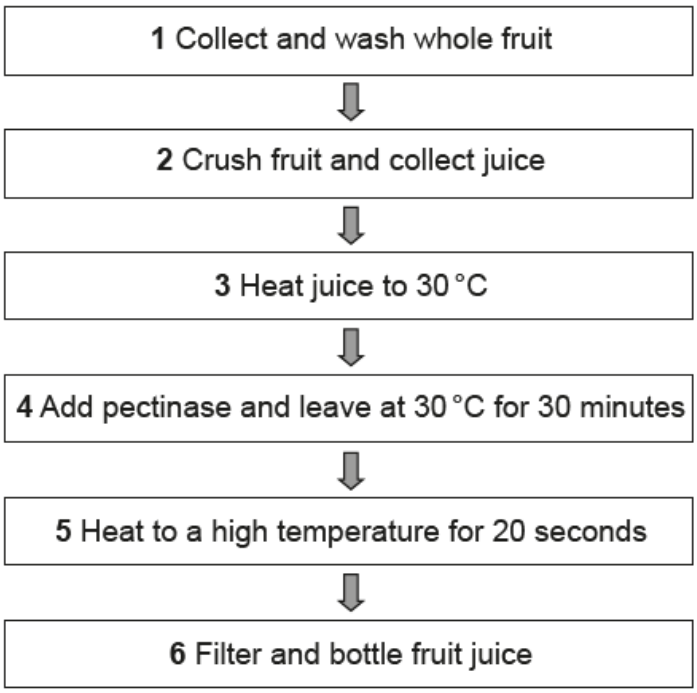


Fig. 8.2

(i) Explain why a temperature of 30 °C is used in step **4**.

.....

.....

..... [1]

(ii) During step **4** amylase may be added to the fruit juice.

Suggest the purpose of adding amylase.

.....

.....

..... [1]

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(iii) Explain why the juice is heated to a high temperature in step **5**.

.....

.....

..... [1]

(e) Yeast is used in biotechnology.

Circle **two** uses of the products of anaerobic respiration in yeast.

biofuels **bread-making** **herbicide production**

insulin production **lactic acid production** **washing powders**

[2]

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12. Nov/2023 /Paper_ 0610/32/No.2(d)

(d) (i) The boxes on the left show the names of some substances that are made in plants.

The boxes on the right show uses of these substances in plants.

Draw lines to link each substance with its correct use in plants. Draw **three** lines.

substance	**use in plants**
	to attract insects for pollination
cellulose	
	to build cell walls
nectar	
	for transpiration
sucrose	
	for transport in the phloem

[3]

(ii) List the chemical elements contained in carbohydrates.

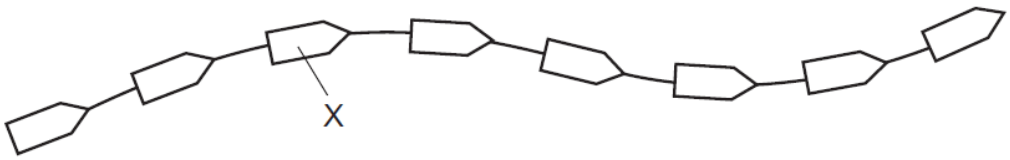
..... [1]

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Biological molecules – 2023 June IGCSE 0610

1. June/2023/Paper_0610/11/No.9

The diagram shows part of a protein molecule.



What does X represent?

A amino acid

B fatty acid

C glycerol

D sugar

2. June/2023/Paper_0610/12/No.7

What is a role of water in digestion?

A It is an enzyme.

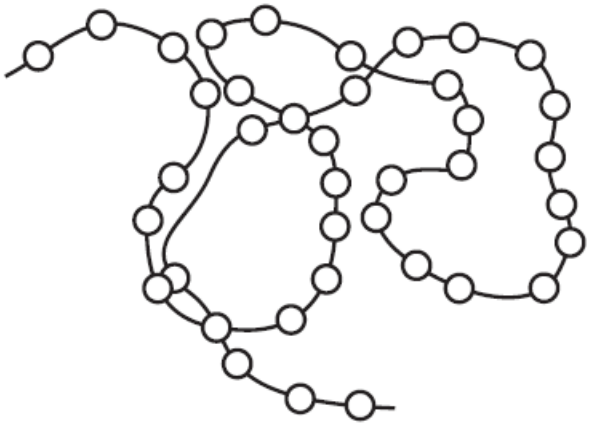
B It is a solvent.

C It is soluble.

D It is a mineral.

3. June/2023/Paper_0610/12/No.9

The diagram represents a protein molecule.



What do the small circles represent?

A amino acids

B fatty acids

C glycerol

D simple sugars

4. June/2023/Paper_0610/12/No.21

What are features of gas exchange surfaces in animals?

A thick-walled and large surface area

B thick-walled and small surface area

C thin-walled and small surface area

D thin-walled and large surface area

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5. June/2023/Paper_0610/13/No.9

Four different foods were tested to find out what they contained.

The results are shown in the table.

Which food contains protein but **not** reducing sugar or starch?

	Benedict's solution test	iodine solution test	biuret test
A	blue	black	purple
B	blue	brown	purple
C	brick-red	black	blue
D	brick-red	brown	blue

6. June/2023/Paper_0610/13/No.16

Which of these is digested by protease?

A ■

B ●

C ■—■—■—■

D ●—●—●—●

key

■ amino acid

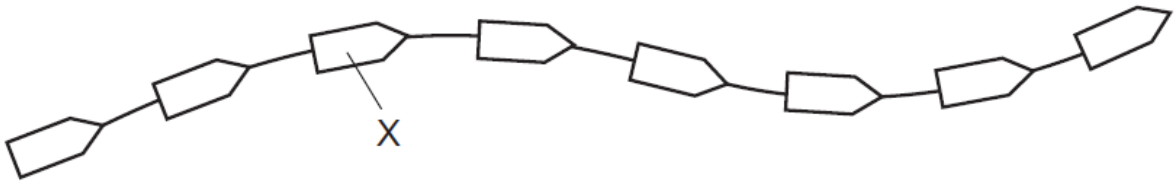
● glucose

— chemical bond

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7. June/2023/Paper_0610/21/No.7

The diagram shows part of a protein molecule.



What does X represent?

A amino acid

B fatty acid

C glycerol

D sugar

8. June/2023/Paper_0610/21/No.8

The structure of DNA involves two strands coiled together to form a double helix.

Which pairing of bases between the two strands is correct?

A A and G **B** A and T **C** C and A **D** C and T

9. June/2023/Paper_0610/22/No.8

DNA contains pairs of bases.

Which pair shows a correct combination of bases?

A A and C **B** C and G **C** G and A **D** T and G

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10. June/2023/Paper_0610/22/No.30

The following are involved in protein synthesis.

1 amino acids assembled in order

2 mRNA moves to the cytoplasm

3 mRNA passing through a ribosome

4 DNA in the nucleus

In which order do they become involved when proteins are made?

A 1 → 3 → 2 → 4

B 3 → 2 → 1 → 4

C 4 → 2 → 3 → 1

D 4 → 3 → 2 → 1

11. June/2023/Paper_0610/23/No.7

The table shows the results of food tests carried out on a fruit.

test	Benedict's solution	biuret	ethanol emulsion	iodine solution
result	positive	positive	negative	negative

What did the fruit contain?

A fat and reducing sugar

B fat and starch

C protein and reducing sugar

D protein and starch

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12. June/2023/Paper_0610/23/No.8

What describes the structure of DNA?

A Each strand contains chemicals called fatty acids.

B Each strand contains a sequence of amino acids.

C Each strand contains mRNA.

D Two strands coil to form a double helix.

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13. June/2023/Paper_0610/41/No.5a

(a) Fig. 5.1 shows the stages involved in protein synthesis.

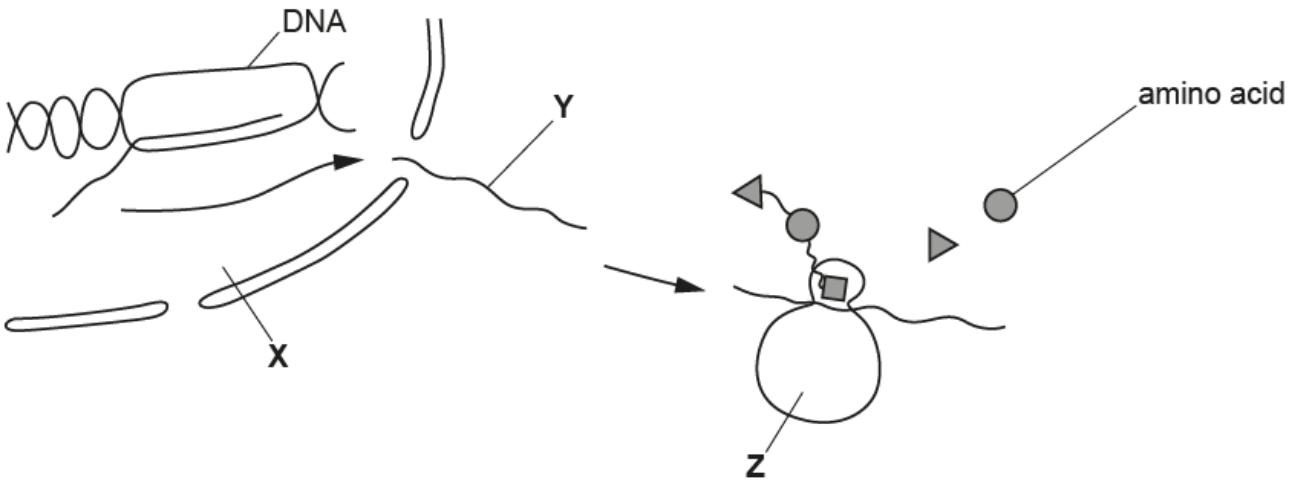


Fig. 5.1

(i) State the names of the parts labelled **X**, **Y** and **Z** in Fig. 5.1.

X .....

Y .....

Z .....

[3]

(ii) State what determines the sequence of the amino acids in the protein that is produced.

.....

.....

..... [1]

(iii) Explain why the sequence of amino acids is important in the production of receptor molecules for neurotransmitters.

.....

.....

.....

.....

..... [2]

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14. June/2023/Paper_0610/42/No.2

Fig. 2.1 is a diagram of part of a DNA molecule.



Fig. 2.1

(a) Draw a circle on Fig. 2.1 to identify **one** pair of bases. [1]

(b) The percentage of **T** bases in the DNA of a species is 29%.

Calculate the percentage of bases that would be base **G** in the DNA of this species.

Space for working.

G .....% [1]

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(c) **(i)** State the name given to a length of DNA that codes for a protein.

..... [1]

(ii) Explain how proteins are made by a cell.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [5]

(iii) DNA controls cell function by controlling the production of proteins.

State **two** types of cell membrane proteins.

1 .....

2 .....

[2]

[Total: 10]

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15. June/2023/Paper_0610/43/No.7

(a) State the name of a chemical element that is found in all proteins but **not** in carbohydrates or fats.

..... [1]

(b) Table 7.1 shows the names of some biological molecules, enzymes and the organs that produce the enzymes.

Complete Table 7.1.

Table 7.1

large biological molecule	products of the breakdown of the large biological molecule	enzyme that catalyses the breakdown of the large biological molecule	organ that produces the enzyme
oil			pancreas
glycogen		glycogen phosphorylase	liver
	maltose	amylase	
protein			stomach

[4]

(c) State **two** hormones that can affect the concentration of glycogen in the liver.

1 .....

2 .....

[2]

[Total: 7]

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16. March/2023/Paper_ 0610/12/No.9

Which substance is used to test a food for vitamin C?

A Benedict's solution

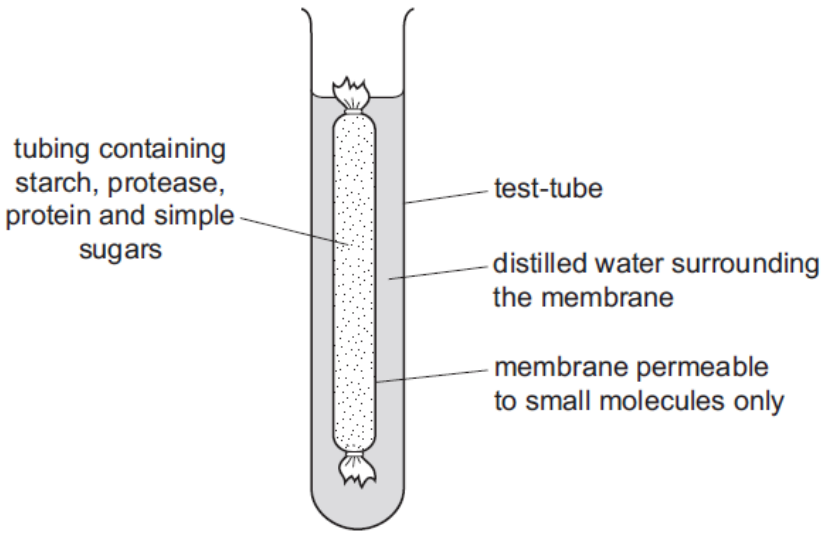
B DCPIP

C ethanol

D iodine solution

17. March/2023/Paper_ 0610/12/No.16

The diagram shows the apparatus used in an experiment. The apparatus was kept at 35 °C.



What is likely to be present in the water surrounding the membrane after 45 minutes?

A amino acids and simple sugars

B protein and amino acids

C protein and simple sugars

D starch and simple sugars

18. March/2023/Paper_ 0610/22/No.7

Which substance is used to test a food for vitamin C?

A Benedict's solution

B DCPIP

C ethanol

D iodine solution

19. March/2023/Paper_ 0610/22/No.30

Which statement about the synthesis of a protein molecule in a cell is correct?

A The gene coding for the protein moves from nucleus to cytoplasm.

B Ribosomes assemble amino acids into DNA molecules.

C mRNA remains in the nucleus.

D The sequence of amino acids is determined by the sequence of bases in the mRNA.

20. March/2023/Paper_ 0610/33/No.1

(a) The nutrient content of five different foods was analysed.

The mass of each nutrient per 100 g of food was estimated.

Table 1.1 shows the results.

Table 1.1

	mass of nutrient per 100 g of food / g			
food	carbohydrates	fats	protein	fibre
A	12	1	5	6
B	23	8	14	2
C	0	36	25	0
D	7	54	28	7
E	21	7	5	8

The recommended daily allowance for these nutrients for an adult is:

- fat – a maximum of 70 g per day
- protein – 50 g per day.

(i) Identify the food in Table 1.1 which contains the most carbohydrate per 100 g.

..... [1]

(ii) A person eats 200 g of each food.

Using the information in Table 1.1, identify the **two** foods that would provide **more** than the recommended daily allowance of fat.

..... and .....

[2]

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(iii) Using the information in Table 1.1, calculate the number of grams of food **C** needed to provide the recommended daily allowance of protein.

..... g [1]

(iv) State **two** groups of nutrients missing from Table 1.1 that are needed as part of a balanced diet.

1 .....

2 .....

[2]

(v) Explain why food **E** is recommended as part of a balanced diet.

.....

.....

.....

.....

.....

.....

..... [3]

(b) Most foods contain some carbohydrates.

State the names of the chemical elements contained in carbohydrates.

..... [1]

(c) Starch is a type of carbohydrate.

Circle the names of **two** other carbohydrates from the list.

amino acids	**amylase**	**cellulose**	**ethanol**
glycogen	**oil**	**protein**	**urea**

[2]

[Total: 12]

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Biological molecules – 2022 November IGCSE 0610 Biology

1. Nov/2022/Paper_11/No.9

Which chemical is used to test for the presence of protein in a food sample?

A Benedict's solution

B biuret solution

C DCPIP

D iodine solution

2. Nov/2022/Paper_12/No.9

Which row shows features of osmosis in cells?

	requires a cell membrane	requires a cell wall	water can move into the cell	water can move out of the cell
A	✓	✓	✓	✓
B	✓	✗	✓	✓
C	✓	✓	✗	✓
D	✗	✓	✓	✗

key

✓ = yes

✗ = no

3. Nov/2022/Paper_13/No.9

Which chemical is used to test for the presence of protein in a food sample?

A Benedict's solution

B biuret solution

C DCPIP

D iodine solution

4. Nov/2022/Paper_23/No.9

A doctor tested the urine of four patients for both glucose and protein. The colours of the urine samples after testing are shown in the table.

Which patient's urine contained both protein and glucose?

	colour after testing with biuret solution	colour after testing with Benedict's solution
A	blue	brick red
B	blue	blue
C	purple	brick red
D	purple	blue

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Biological molecules – 2022 June IGCSE 0610

1. June/2022/Paper_ 11/No.11

2. June/2022/Paper_ 11/No.9

What are the smaller basic units of starch and glycogen molecules?

	starch	glycogen
A	amino acids	fatty acids and glycerol
B	amino acids	glucose
C	glucose	fatty acids and glycerol
D	glucose	glucose

3. June/2022/Paper_ 11/No.10

Some terms used to describe enzyme-controlled reactions are listed.

1 catalyst

2 product

3 protein

4 substrate

Which terms describe an enzyme?

A 1 and 3 **B** 1 and 4 **C** 2 and 3 **D** 2 and 4

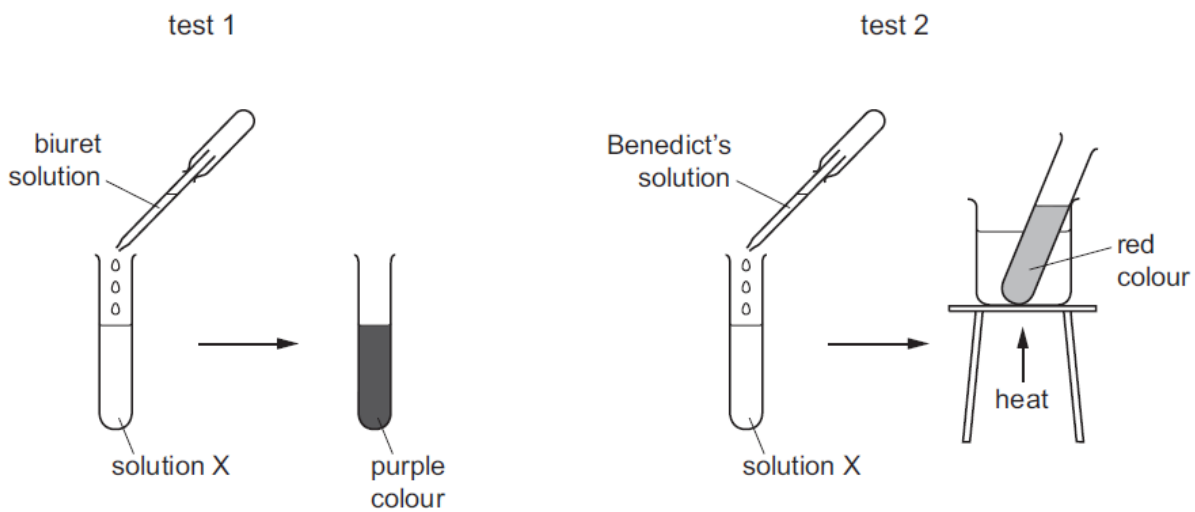
4. June/2022/Paper_ 12/No.9

What are the smaller basic units of starch and glycogen molecules?

	starch	glycogen
A	amino acids	fatty acids and glycerol
B	amino acids	glucose
C	glucose	fatty acids and glycerol
D	glucose	glucose

5. June/2022/Paper_ 12/No.11

The diagram shows two food tests being carried out on solution X.



Which nutrients are present in solution X?

A protein and starch

B protein and sugar

C starch and fat

D starch and sugar

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6. June/2022/Paper_ 12/No.22

The photographs show a positive test for the presence of carbon dioxide gas.



test-tube at the start



test-tube at the end

Which reagent is being used in the test-tube?

A Benedict's

B biuret

C DCPIP

D limewater

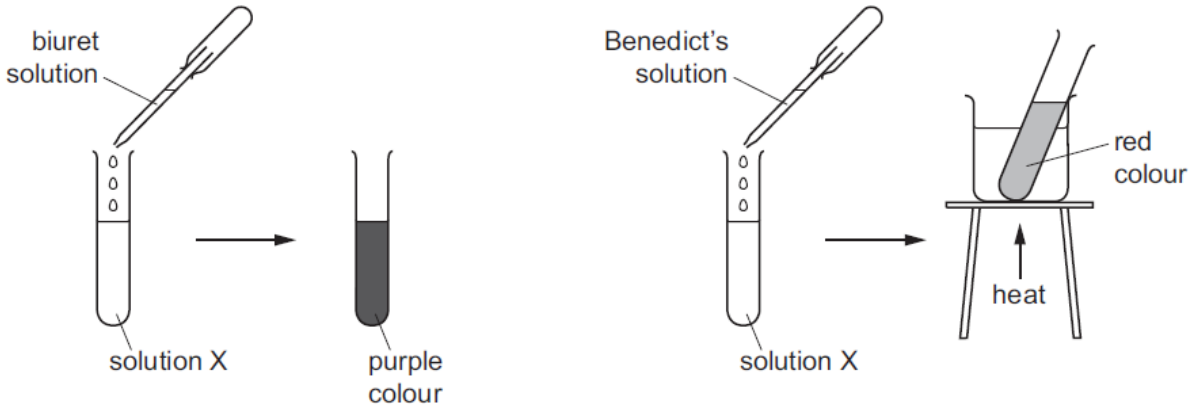
7. June/2022/Paper_ 13/No.9

What are the smaller basic units of starch and glycogen molecules?

	starch	glycogen
A	amino acids	fatty acids and glycerol
B	amino acids	glucose
C	glucose	fatty acids and glycerol
D	glucose	glucose

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8.



Which nutrients are present in solution X?

A protein and starch

B protein and sugar

C starch and fat

D starch and sugar

9. June/2022/Paper_ 21/No.7

What are the smaller basic units of starch and glycogen molecules?

	starch	glycogen
A	amino acids	fatty acids and glycerol
B	amino acids	glucose
C	glucose	fatty acids and glycerol
D	glucose	glucose

10. June/2022/Paper_ 23/No.7

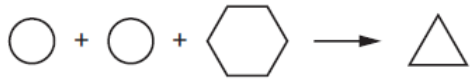
What are the smaller basic units of starch and glycogen molecules?

	starch	glycogen
A	amino acids	fatty acids and glycerol
B	amino acids	glucose
C	glucose	fatty acids and glycerol
D	glucose	glucose

11. June/2022/Paper_ 23/No.14

Which diagram represents the action of lipase?

A



B

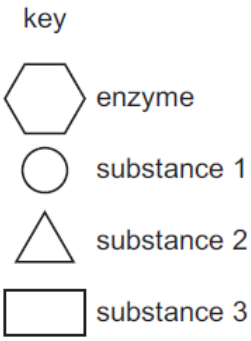


C



D



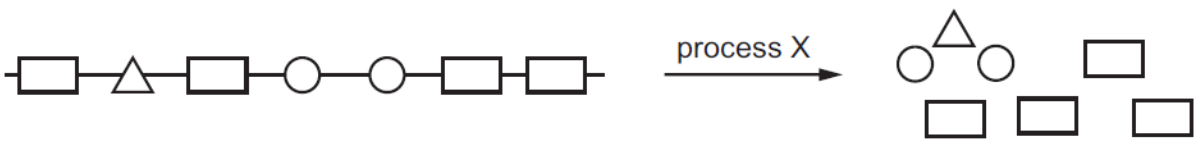


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1. Nov/2021/Paper_11/No.11

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

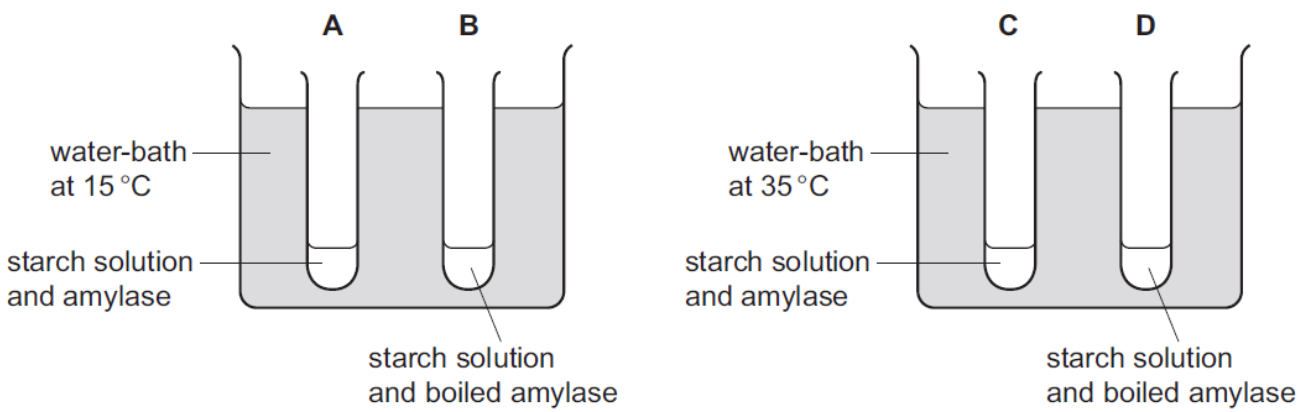
C digestion

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

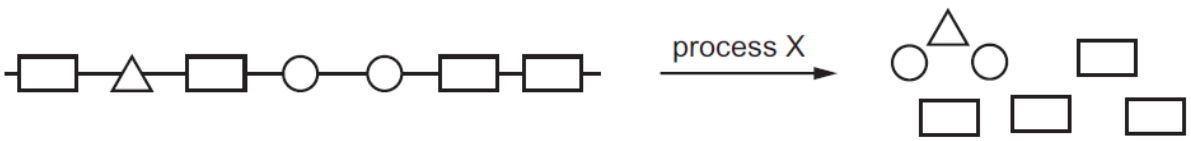
B to make fats

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

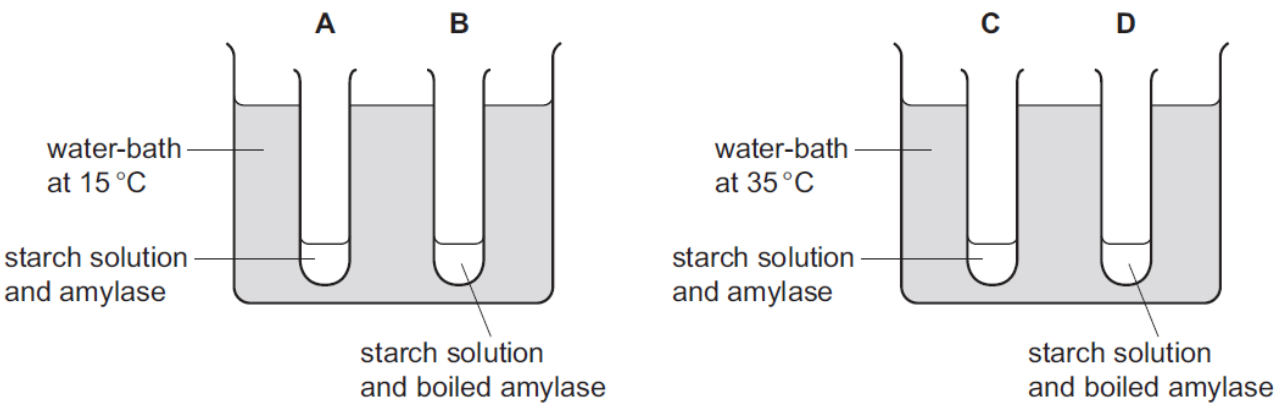
C digestion

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

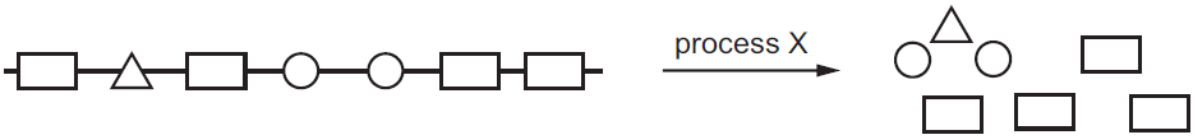
B magnesium

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

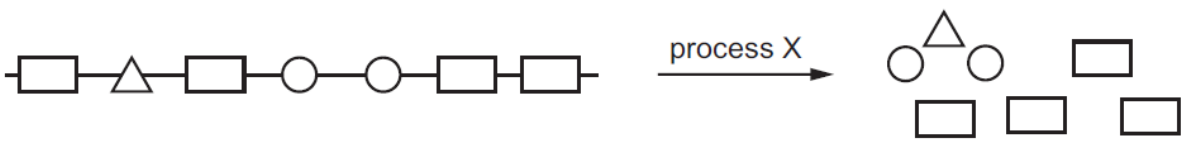
C G-G-C-T-C-A

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

11. Nov/2021/Paper_21/No.11

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

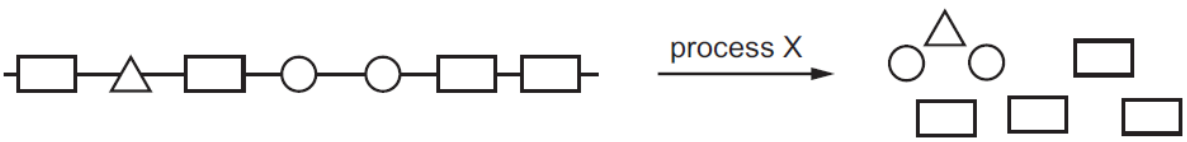
B C-C-G-A-G-T

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.

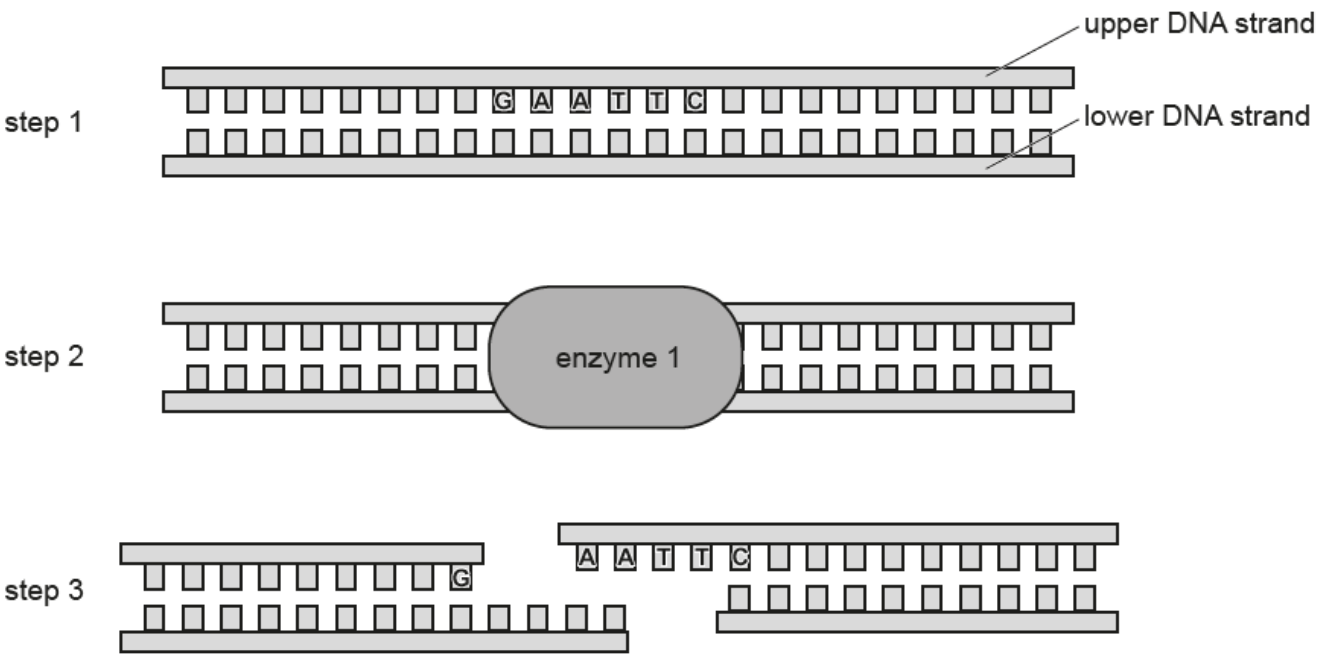


Fig. 1.1

(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]

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(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]

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(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.

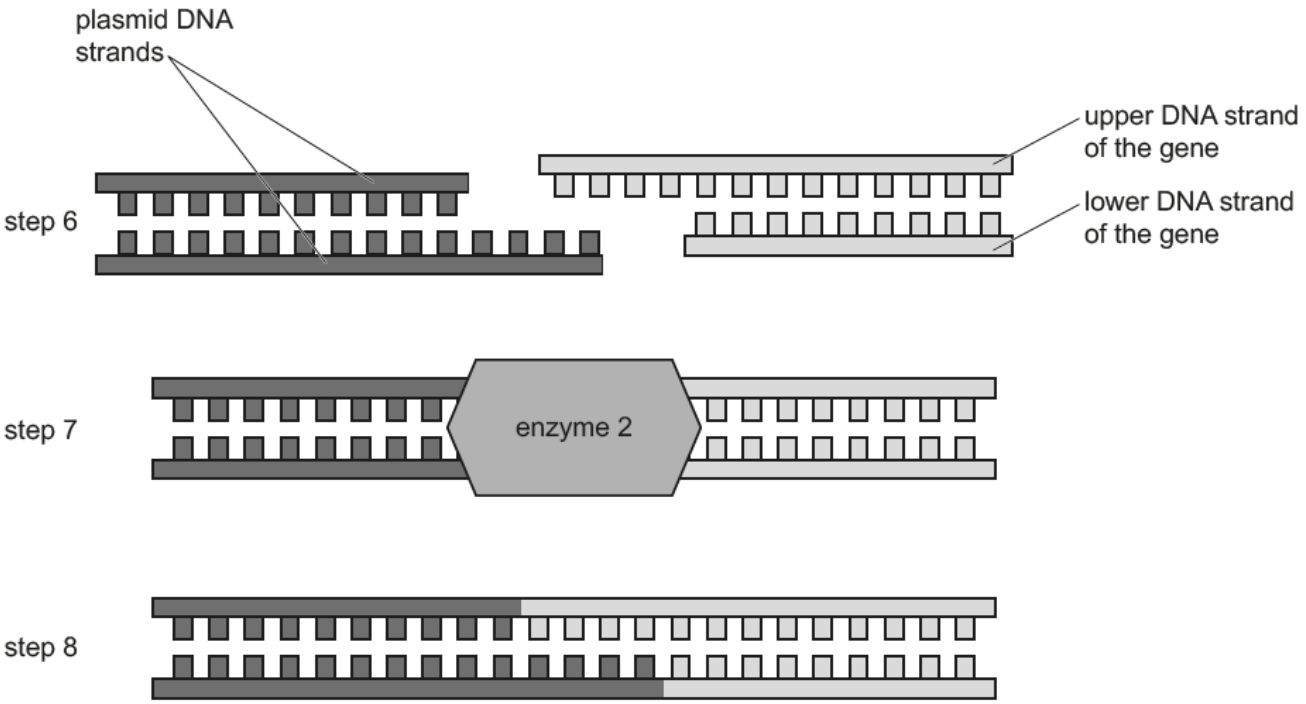


Fig. 1.2

(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]

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(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]

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Biological molecules – 2021 IGCSE 0610

1. March/2021/Paper_12/No.9

Four foods were tested for each of these nutrients:

fat (using the ethanol emulsion test)

protein (using the biuret test)

reducing sugar (using Benedict's solution).

Which food contains protein and fat?

	colour of result of food test		
	purple	brick-red	milky-white
A	✓	✗	✓
B	✓	✗	✗
C	✗	✓	✓
D	✗	✓	✗

key

✓ = nutrient present

✗ = nutrient absent

2. March/2021/Paper_22/No.34

A sunflower has 17 chromosomes in each pollen nucleus. These nuclei are produced by the process of ……1…… in the anthers. They are genetically ……2…… all the pollen nuclei produced by those anthers. After fertilisation the resulting zygote will have ……3…… chromosomes.

Which row correctly completes gaps 1, 2 and 3?

	1	2	3
A	meiosis	identical to	34
B	meiosis	different from	34
C	mitosis	identical to	17
D	mitosis	different from	34

3. March/2021/Paper_22/No.33

The statements describe steps in protein synthesis.

1 Copies of the gene are carried to the cytoplasm as mRNA molecules.

2 Each ribosome assembles amino acids into a protein molecule.

3 The gene coding for a protein is copied in the nucleus.

4 The mRNA molecules pass through ribosomes.

Which sequence of steps is correct?

A $1 \rightarrow 2 \rightarrow 4 \rightarrow 3$

B $1 \rightarrow 3 \rightarrow 2 \rightarrow 4$

C $3 \rightarrow 1 \rightarrow 4 \rightarrow 2$

D $3 \rightarrow 4 \rightarrow 2 \rightarrow 1$

4. March/2021/Paper_22/No.32

What is defined as 'a thread-like structure of DNA, carrying genetic information in the form of genes'?

A allele

B chromosome

C protein

D zygote

5. June/2021/Paper_11/No.9

Which element is found in proteins but **not** carbohydrates?

A carbon

B hydrogen

C nitrogen

D oxygen

6. June/2021/Paper_11/No.10

Starch is digested by amylase in the mouth, but it is not digested in the stomach.

What is the reason for this?

A All starch digestion is completed in the mouth.

B The pH in the stomach is not suitable for the amylase to work.

C The starch does not stay in the stomach long enough to be digested.

D The temperature in the stomach is not suitable for the amylase to work.

7. June/2021/Paper_11/No.15

What are the products when proteins are broken down?

A amino acids

B fatty acids

C glycerol

D simple sugars

8. June/2021/Paper_12/No.9

Which element is found in proteins but **not** carbohydrates?

A carbon

B hydrogen

C nitrogen

D oxygen

9. June/2021/Paper_13/No.9

Which element is found in proteins but **not** carbohydrates?

A carbon

B hydrogen

C nitrogen

D oxygen

10. June/2021/Paper_13/No.11

Which type of molecule are enzymes made of?

A carbohydrate

B fat

C protein

D vitamin

11. June/2021/Paper_21/No.2

The table shows a section of DNA taken from four different organisms.

organism	base sequence									
W	C	A	C	A	A	T	C	G	A	A
X	G	T	C	A	A	T	G	G	T	G
Y	C	T	C	A	A	T	C	G	T	A
Z	C	T	C	A	T	T	C	G	T	A

Which two organisms are the most distantly related to each other?

A W and X **B** W and Z **C** X and Y **D** X and Z

12. June/2021/Paper_21/No.9

Which element is found in proteins but **not** carbohydrates?

A carbon

B hydrogen

C nitrogen

D oxygen

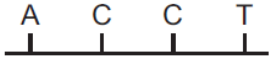
13. June/2021/Paper_21/No.10

The diagram shows a short section of a single strand of DNA.

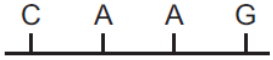


Which strand of DNA will combine with this strand to form part of a double helix?

A



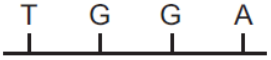
B



C



D



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14. June/2021/Paper_22/No.9

Which element is found in proteins but **not** carbohydrates?

A carbon

B hydrogen

C nitrogen

D oxygen

15. June/2021/Paper_22/No.10

The sequence of the bases present on one strand of a DNA molecule is shown.

ATTGGACGGT

Which sequence shows the bases present on the opposite strand?

A CGGTTCATTG

B TCCAATGAAC

C TAACCTGCCA

D ATTGGACGGT

16. June/2021/Paper_23/No.9

Which element is found in proteins but **not** carbohydrates?

A carbon

B hydrogen

C nitrogen

D oxygen

17. June/2021/Paper_23/No.10

A DNA sample was tested to identify its bases.

35% of the bases in the DNA were G.

Which row shows the percentages of the other bases?

	percentage of bases		
	A	C	T
A	15	15	35
B	15	35	15
C	35	15	35
D	35	35	15

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18. June/2021/Paper_43/No.2

Insulin is a protein made by cells in the pancreas.

Fig. 2.1 shows how insulin is made in a pancreatic cell.

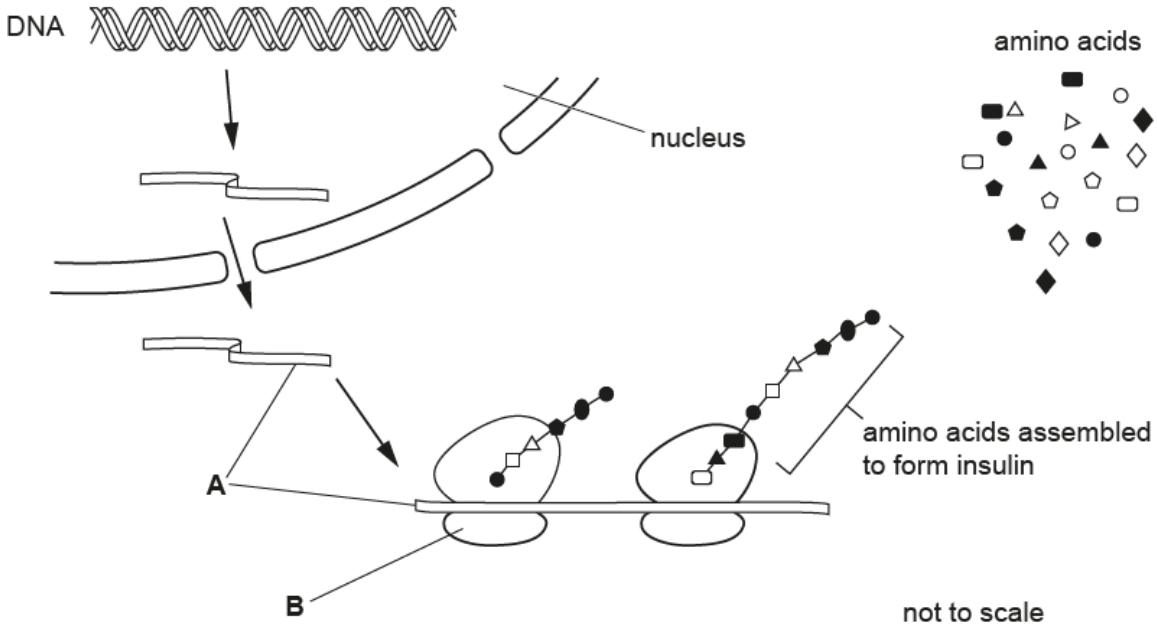


Fig. 2.1

(a) (i) State the name of molecule **A** in Fig. 2.1.

..... [1]

(ii) State the name of structure **B** in Fig. 2.1.

..... [1]

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(iii) Explain the role of molecule **A** in protein synthesis, as shown in Fig. 2.1.

.....

.....

.....

.....

.....

.....

..... [3]

(b) Insulin is secreted from cells in the pancreas when the concentration of glucose in the blood increases.

Outline the role of insulin.

.....

.....

.....

.....

.....

.....

.....

..... [4]

(c) State the names of **two** substances, **other than** insulin, that are secreted by the pancreas.

1 .....

2 .....

[2]

[Total: 11]

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Biological molecules – 2020 IGCSE 0610

1. Nov/2020/Paper_11/No.9

Which substances are made by linking together glucose molecules only?

A cellulose, glycogen and starch

B fats, cellulose and proteins

C proteins, oils and glycogen

D starch, fats and oils

2. Nov/2020/Paper_12/No.9

Which substances are made by linking together glucose molecules only?

A cellulose, glycogen and starch

B fats, cellulose and proteins

C proteins, oils and glycogen

D starch, fats and oils

3. Nov/2020/Paper_13/No.9

Which substances are made by linking together glucose molecules only?

A cellulose, glycogen and starch

B fats, cellulose and proteins

C proteins, oils and glycogen

D starch, fats and oils

4. Nov/2020/Paper_21/No.7

Which substances are made by linking together glucose molecules only?

A cellulose, glycogen and starch

B fats, cellulose and proteins

C proteins, oils and glycogen

D starch, fats and oils

5. Nov/2020/Paper_21/No.8

When bases pair up in the formation of DNA, what is one of the pairings?

A G with A **B** G with C **C** G with G **D** G with T

6. Nov/2020/Paper_22/No.7

Which substances are made by linking together glucose molecules only?

A cellulose, glycogen and starch

B fats, cellulose and proteins

C proteins, oils and glycogen

D starch, fats and oils

7. Nov/2020/Paper_22/No.8

When bases pair up in the formation of DNA, what is one of the pairings?

A G with A **B** G with C **C** G with G **D** G with T

8. Nov/2020/Paper_23/No.7

Which substances are made by linking together glucose molecules only?

A cellulose, glycogen and starch

B fats, cellulose and proteins

C proteins, oils and glycogen

D starch, fats and oils

9. Nov/2020/Paper_23/No.8

When bases pair up in the formation of DNA, what is one of the pairings?

A G with A **B** G with C **C** G with G **D** G with T

10. Nov/2020/Paper_23/No.3o

Which statement explains why the hormone FSH is used in fertility treatment?

A It causes the formation of a zygote during *in vitro* fertilisation (IVF).

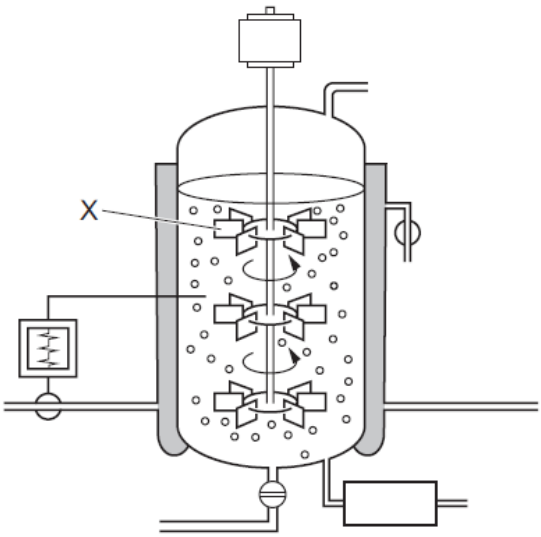
B It stimulates ovulation for artificial insemination (AI).

C It stimulates the production of large numbers of eggs for use in *in vitro* fertilisation (IVF).

D It is used to maintain the uterus wall ready for artificial insemination (AI).

11. Nov/2020/Paper_23/No.37

The diagram shows a fermenter used to produce penicillin.



What is the function of part X?

A allow microorganisms to enter the fermenter

B maintain an even temperature inside the fermenter

C monitor the temperature inside the fermenter

D sterilise the contents of the fermenter

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Biological molecules – 2020 IGCSE 0610

1. March/2020/Paper_12/No.9

A test was performed on a food substance. A positive result was shown by a colour change to blue-black.

What solution was used for the test?

A biuret solution

B DCPIP solution

C iodine solution

D Benedict's solution

2. March/2020/Paper_22/No.9

A test was performed on a food substance. A positive result was shown by a colour change to blue-black.

What solution was used for the test?

A biuret solution

B DCPIP solution

C iodine solution

D Benedict's solution

3. June/2020/Paper_11/No.8

Which food-testing solution shows a positive result when it turns from blue to purple?

A Benedict's solution

B biuret solution

C ethanol

D iodine solution

4. June/2020/Paper_11/No.31

What is defined as a length of DNA that codes for a protein?

A amino acid

B chromosome

C gene

D nucleus

5. June/2020/Paper_12/No.11

Which substance found in a healthy diet helps to prevent constipation?

A fat

B fibre

C minerals

D vitamins

6. June/2020/Paper_13/No.8

Which food-testing solution shows a positive result when it turns from blue to purple?

A Benedict's solution

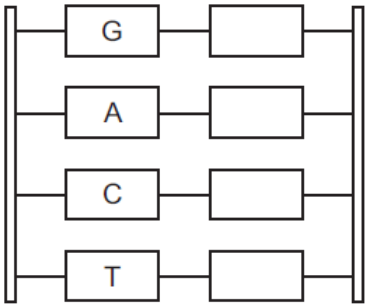
B biuret solution

C ethanol

D iodine solution

7. June/2020/Paper_21/No.7

The diagram shows a section of DNA, with four bases identified on one strand.



Which sequence of bases would be on the other strand, starting from the top?

A AGTC **B** CTGA **C** GACT **D** TCAG

8. June/2020/Paper_21/No.8

Which food-testing solution shows a positive result when it turns from blue to purple?

A Benedict's solution

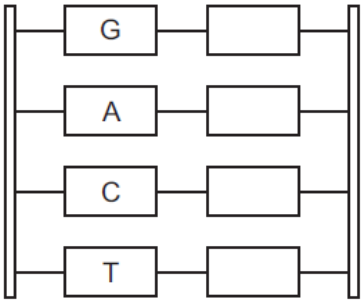
B biuret solution

C ethanol

D iodine solution

9. June/2020/Paper_22/No.7

The diagram shows a section of DNA, with four bases identified on one strand.



Which sequence of bases would be on the other strand, starting from the top?

A AGTC **B** CTGA **C** GACT **D** TCAG

10. June/2020/Paper_22/No.8

Which food-testing solution shows a positive result when it turns from blue to purple?

A Benedict's solution

B biuret solution

C ethanol

D iodine solution

11. June/2020/Paper_22/No.29

Which row describes what happens in the production of proteins?

	what forms the genetic code	what the DNA codes for	what carries a copy of the gene to the cytoplasm
A	sequence of amino acids	sequence of bases	mRNA
B	sequence of amino acids	sequence of proteins	ribosomes
C	sequence of bases	sequence of amino acids	mRNA
D	sequence of bases	sequence of proteins	ribosomes