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Cambridge Assessment International Education
Cambridge International General Certificate of Secondary Education

BIOLOGY **0610/12**

Paper 1 Multiple Choice (Core) **February/March 2019**

45 minutes

Additional Materials: Multiple Choice Answer Sheet
Soft clean eraser
Soft pencil (type B or HB is recommended)

8560040174

READ THESE INSTRUCTIONS FIRST

Write in soft pencil.
Do not use staples, paper clips, glue or correction fluid.
Write your name, centre number and candidate number on the Answer Sheet in the spaces provided unless this has been done for you.
DO **NOT** WRITE IN ANY BARCODES.

There are **forty** questions on this paper. Answer **all** questions. For each question there are four possible answers **A**, **B**, **C** and **D**.
Choose the **one** you consider correct and record your choice in **soft pencil** on the separate Answer Sheet.

Read the instructions on the Answer Sheet very carefully.

Each correct answer will score one mark. A mark will not be deducted for a wrong answer.
Any rough working should be done in this booklet.
Electronic calculators may be used.

This syllabus is regulated for use in England, Wales and Northern Ireland as a Cambridge International Level 1/Level 2 Certificate.

This document consists of **14** printed pages and **2** blank pages.

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1 A living organism, X, can make its own food, get rid of toxic materials and detect and respond to stimuli.

What **other** four processes must organism X carry out to stay alive?

A excretion, growth, movement, sensitivity

B excretion, growth, nutrition, respiration

C growth, movement, reproduction, respiration

D movement, reproduction, respiration, sensitivity

2 What is a correct way of naming a species using the binomial system?

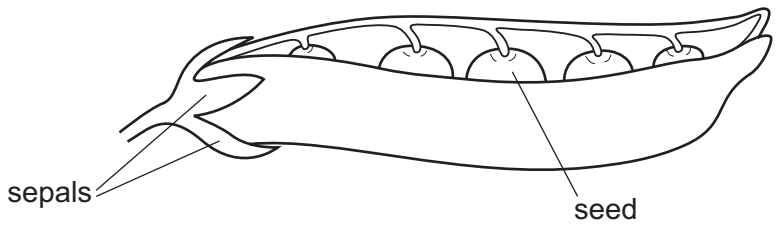
A *Homo sapiens*

B *Homo Sapiens*

C human being

D sapiens

3 The diagram shows a pea pod, which is a fruit.



Use the key to identify the fruit.

1 sepals fall off as soon as the flower is fertilised ..... go to 2

sepals do not fall off as soon as the flower is fertilised ..... go to 3

2 pod contains fewer than four seeds ..... **A**

pod contains more than four seeds ..... **B**

3 fruit splits to release several seeds ..... **C**

fruit splits to release only one seed ..... **D**

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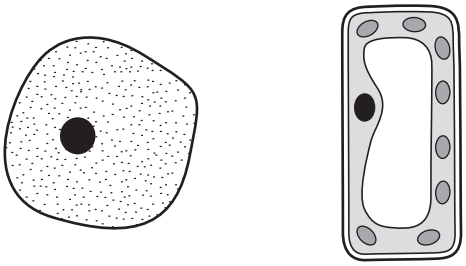
4 The diagram shows two cells.



Which process can be carried out by only one of these cells?

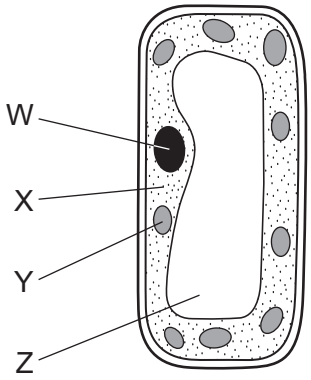
A controlling the chemical reactions in the cell

B controlling the movement of substances into the cell

C making starch inside the cell

D using glucose inside the cell

5 The diagram shows a palisade mesophyll cell from a green leaf.



In which labelled part does photosynthesis occur and where are chromosomes found?

	photosynthesis occurs	where chromosomes are found
A	X	W
B	X	Z
C	Y	X
D	Y	W

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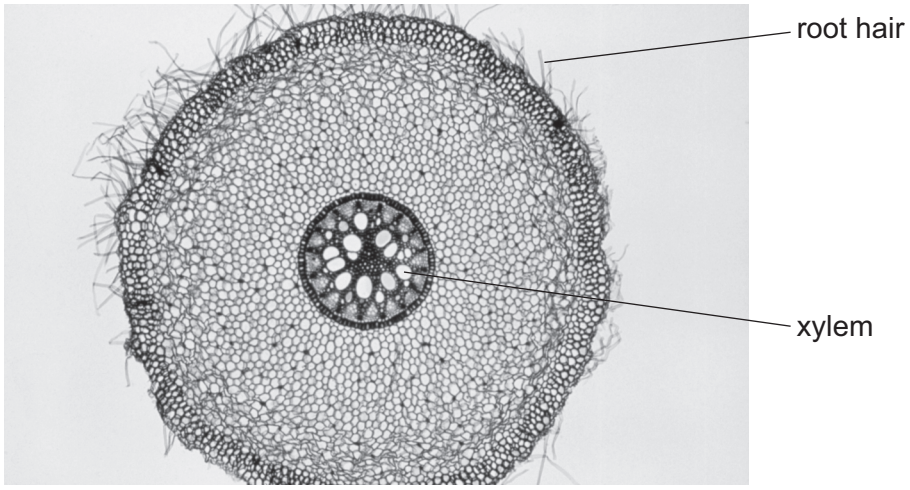
6 The photograph shows a cross-section of a root.



The root hair and the xylem are part of the same

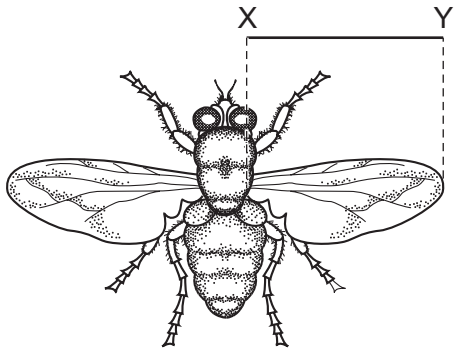
A cell and organism.

B cell and tissue.

C organ and organism.

D tissue and organ.

7 The diagram shows a fly.



The line XY represents the length of the wing.

The length of line XY is 26 mm.

The actual size of the wing between XY is 4 mm.

What is the magnification of the image?

A ×0.15 **B** ×6.5 **C** ×22 **D** ×104

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8 A frog is an animal. A frog's skin is permeable to oxygen and carbon dioxide.

When a frog is swimming in pond water, in which directions will there be a net diffusion of oxygen and carbon dioxide?

	from the frog into the water	from the water into the frog
A	carbon dioxide	oxygen
B	carbon dioxide and oxygen	no movement
C	oxygen	carbon dioxide
D	no movement	carbon dioxide and oxygen

9 Which process only involves the movement of water through the partially permeable membrane of a cell?

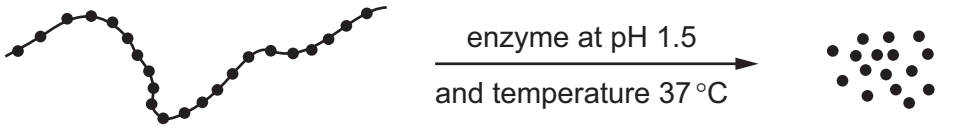
A absorption

B evaporation

C osmosis

D transpiration

10 The diagram shows the effect of an enzyme working in the human digestive system.



What would **reduce** the rate of production of amino acids?

A removing the amino acids as they are formed

B increasing the amount of protein

C raising the temperature to 37.1 °C

D raising the pH to 7.5

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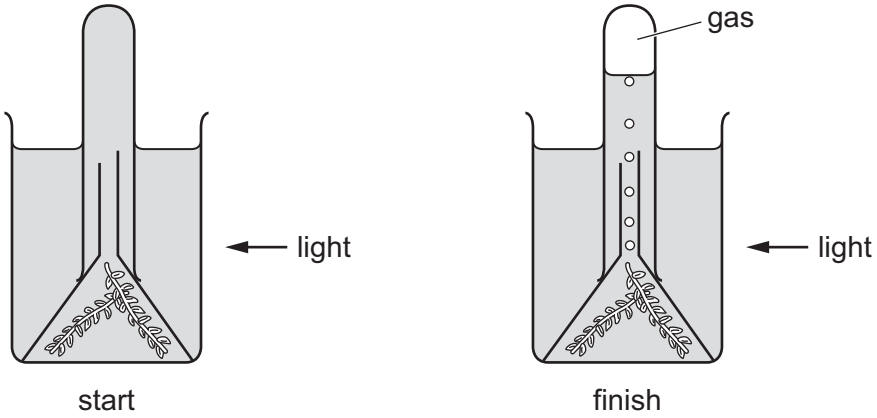
11 The diagram shows an experiment to investigate photosynthesis.



What is the most abundant gas present at the top of the tube at the end of the experiment?

A carbon dioxide

B methane

C sulfur dioxide

D oxygen

12 DCPIP can be used to test for vitamin C in food. Lemon juice contains vitamin C.

When lemon juice is tested what are the results?

A starts blue, finishes colourless

B starts colourless, finishes blue

C stays blue

D stays colourless

13 What is meant by chemical digestion?

A Large insoluble molecules are broken down into small soluble molecules.

B Large soluble molecules are broken down into small insoluble molecules.

C Small insoluble molecules are built up into large soluble molecules.

D Small soluble molecules are built up into large insoluble molecules.

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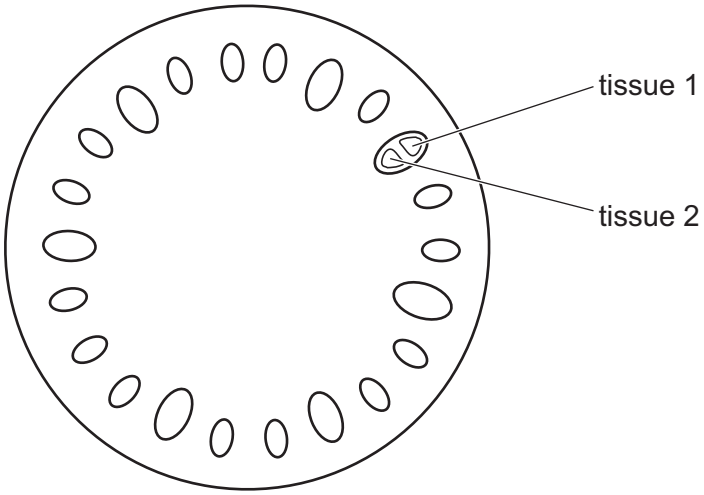
14 The diagram shows a cross-section through a plant stem.

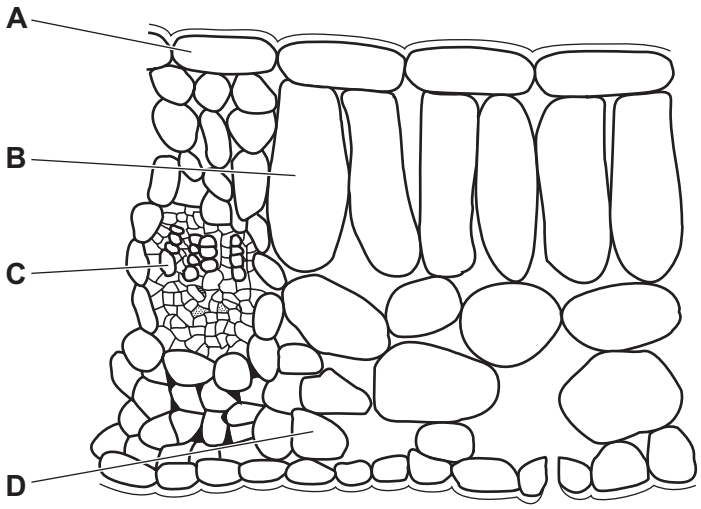


What are the functions of the two labelled tissues?

	tissue 1	tissue 2
A	transport only	support only
B	transport only	transport and support
C	transport and support	transport only
D	support only	transport only

15 A leafy shoot is placed in a solution of a red dye.

After 30 minutes, which part of a leaf from this shoot will contain the red dye?



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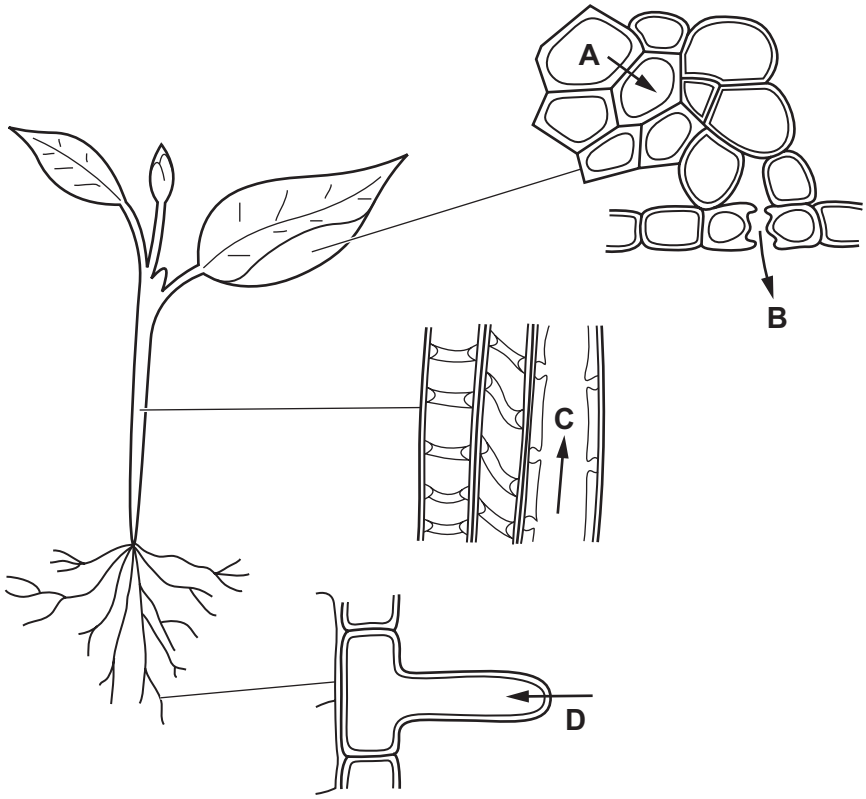
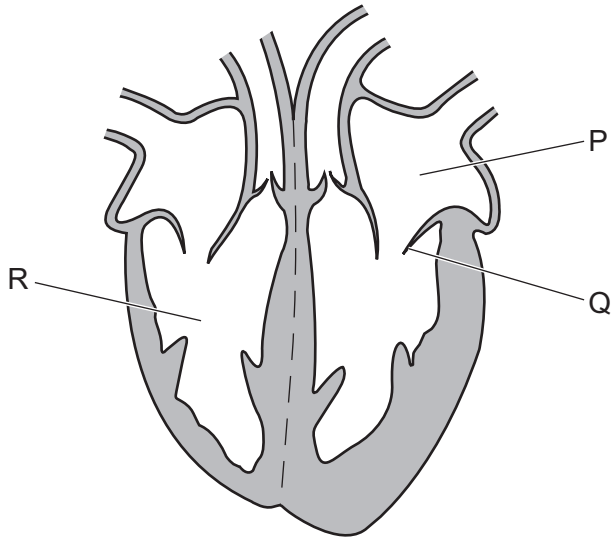
16 The diagrams show stages in the passage of water through a plant.

Which arrow shows water moving in the form of water vapour?



17 The diagram shows a section of the heart.



What is the function of the structure labelled Q?

A It controls the amount of blood leaving the heart.

B It increases the pressure in part R.

C It prevents backflow of blood into part P.

D It prevents blood flowing into the vena cava.

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18 The body has different types of defences against pathogens.

1 antibodies

2 hairs in the nose

3 mucus

4 skin

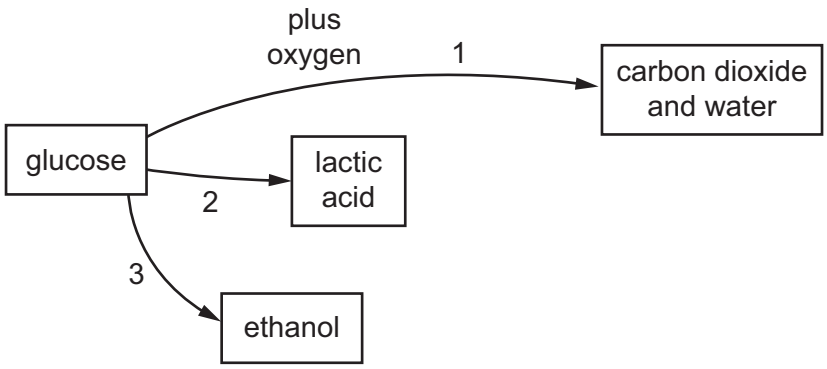
Which defences help to prevent pathogens reaching the alveoli when breathing in?

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

19 What are the approximate percentages of oxygen and carbon dioxide in inspired air?

	percentage of oxygen	percentage of carbon dioxide
A	16	4.00
B	16	8.00
C	20	0.04
D	20	4.00

20 The flow diagram summarises three different ways that glucose can be broken down to release energy.



Which routes involve the action of enzymes?

A 1 only **B** 1 and 2 only **C** 2 and 3 only **D** 1, 2 and 3

21 Which of these would increase the volume of urine produced by a human?

A being in a hot environment

B drinking large volumes of water

C suffering from diarrhoea

D running a long distance

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22 Which structure controls the amount of light entering the eye?

A cornea

B iris

C lens

D retina

23 Which hormone is secreted by the pancreas?

A adrenaline

B insulin

C oestrogen

D testosterone

24 In which organ is alcohol broken down?

A brain

B kidney

C liver

D stomach

25 Antibiotics can be used to treat some infections.

Antibiotics can treat infections caused by

A all pathogens.

B bacteria and viruses only.

C bacteria only.

D viruses only.

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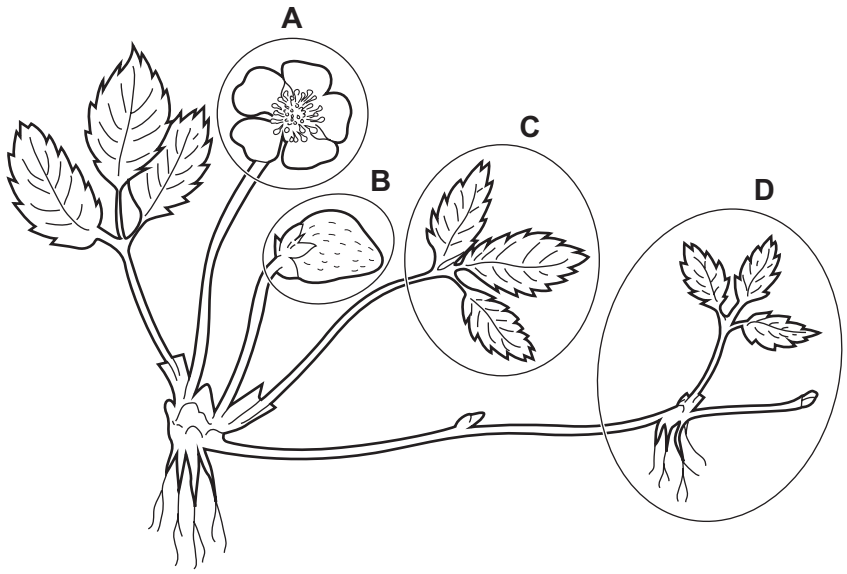
26 The diagram shows a strawberry plant.

Which labelled part of the plant can only be produced by asexual reproduction?



27 What must always be available to allow seeds to germinate?

A carbon dioxide

B light

C mineral salts

D water

28 What is a possible order of events during labour and birth?

	1st	2nd	3rd	4th
A	cervix dilates	baby passes through vagina	amniotic sac breaks	uterus muscles begin to contract
B	baby passes through vagina	cervix dilates	amniotic sac breaks	uterus muscles begin to contract
C	uterus muscles begin to contract	cervix dilates	amniotic sac breaks	baby passes through vagina
D	uterus muscles begin to contract	baby passes through vagina	cervix dilates	amniotic sac breaks

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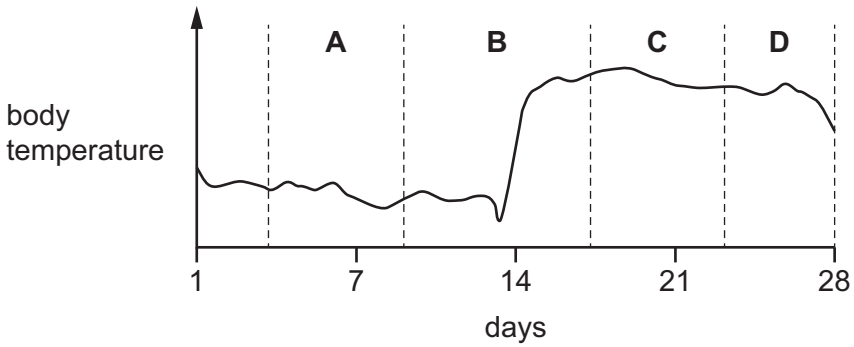
29 The diagram shows a woman's body temperature during a menstrual cycle.

Monitoring body temperature is one natural method of birth control.

During which part of the menstrual cycle should sexual intercourse be avoided to try to prevent pregnancy?



30 What is the name of a length of DNA that codes for a protein?

A amino acid

B chromosome

C gene

D nucleus

31 Which cells in the human body are produced by the process of meiosis?

A blood cells

B muscle cells

C skin cells

D sperm cells

32 Which human characteristic is an example of discontinuous variation?

A height

B skin colour

C tongue rolling

D weight

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33 An adaptive feature of an organism is defined as one that helps the organism to

A change.

B disperse to new habitats.

C grow.

D survive and reproduce.

34 What is the principal source of energy input to biological systems?

A carbon dioxide in air

B glucose

C minerals in soil

D sunlight

35 Which process involves water falling from clouds towards the ground?

A evaporation

B cloud formation

C precipitation

D transpiration

36 Which enzyme in a biological washing powder will help remove fatty stains?

A amylase

B lipase

C pectinase

D protease

37 Corn is a crop plant. Glow-worms are organisms which give off light.

Which process could use these two species to make corn plants which glow?

A breeding the organisms together

B causing mutations in the organisms

C selective breeding

D transferring genes from one species to another species

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38 What is used to reduce competition from weeds when growing crops?

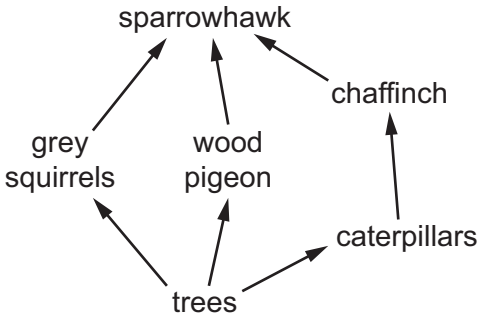
A deforestation

B fertiliser

C herbicide

D insecticide

39 The food web shows the feeding relationships in a woodland.



If all the chaffinches in the food web die, which effect would this have?

A The amount of damage to trees will increase.

B The food supply for grey squirrels will increase.

C The number of wood pigeons will increase.

D The population of caterpillars will decrease.

40 What is an example of a non-renewable resource?

A biofuels

B fish

C fossil fuels

D trees

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