Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

BIOLOGY **0610/13**

Paper 1 Multiple Choice (Core) **May/June 2018**

45 minutes

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

* 0 4 3 3 3 6 3 3 3 6 *

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 approved for use in England, Wales and Northern Ireland as a Cambridge International Level 1/Level 2 Certificate.

This document consists of **15** printed pages and **1** blank page.

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1 Which organisms carry out respiration, growth, movement and excretion?

A all animals and all plants

B animals only

C arthropods and flowering plants only

D plants only

2 The diagram shows an animal whose scientific name is *Falco peregrinus*.



To which species does it belong?

A bird

B *F. peregrinus*

C *Falco*

D vertebrate

3 What kind of skin do amphibians have?

A dry without scales

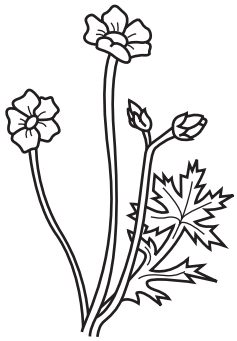
B dry with scales

C moist without scales

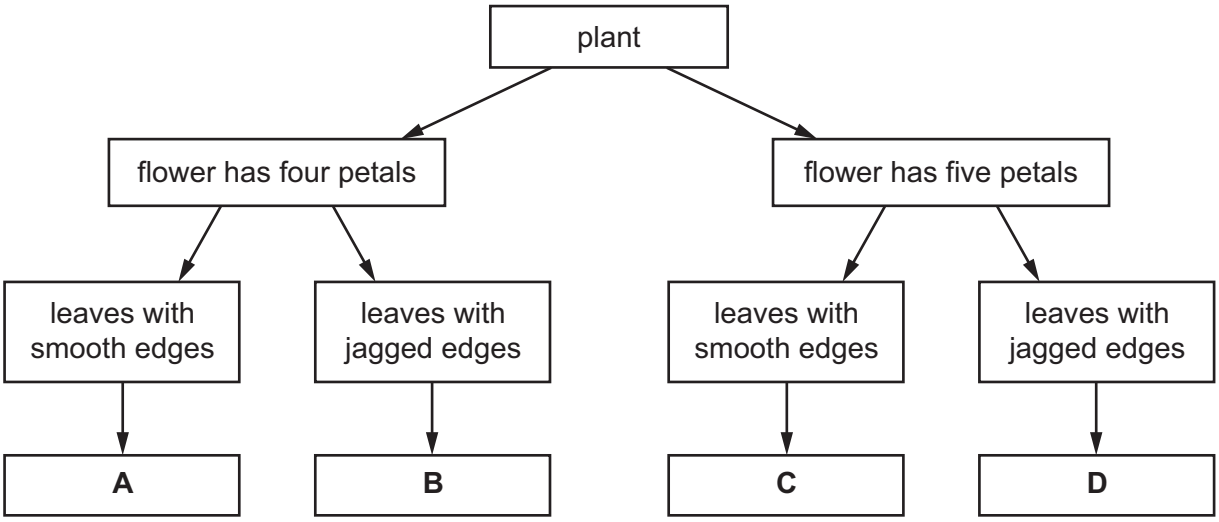
D moist with scales

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4 The diagram shows a flowering plant.

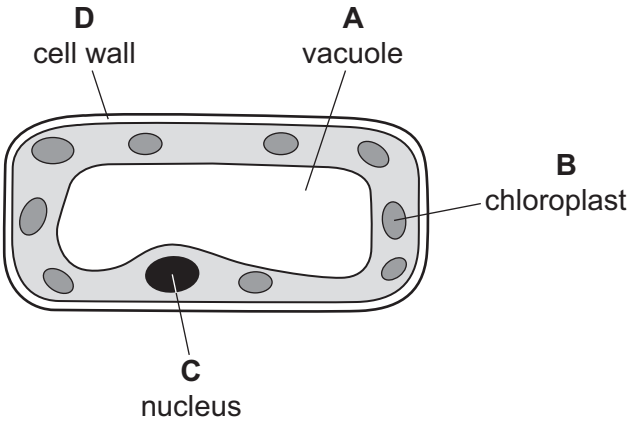


Use the key to identify the plant.



5 The diagram shows a plant cell.

In which labelled part of the cell is sugar made?



6 Why do some root cells have root hairs?

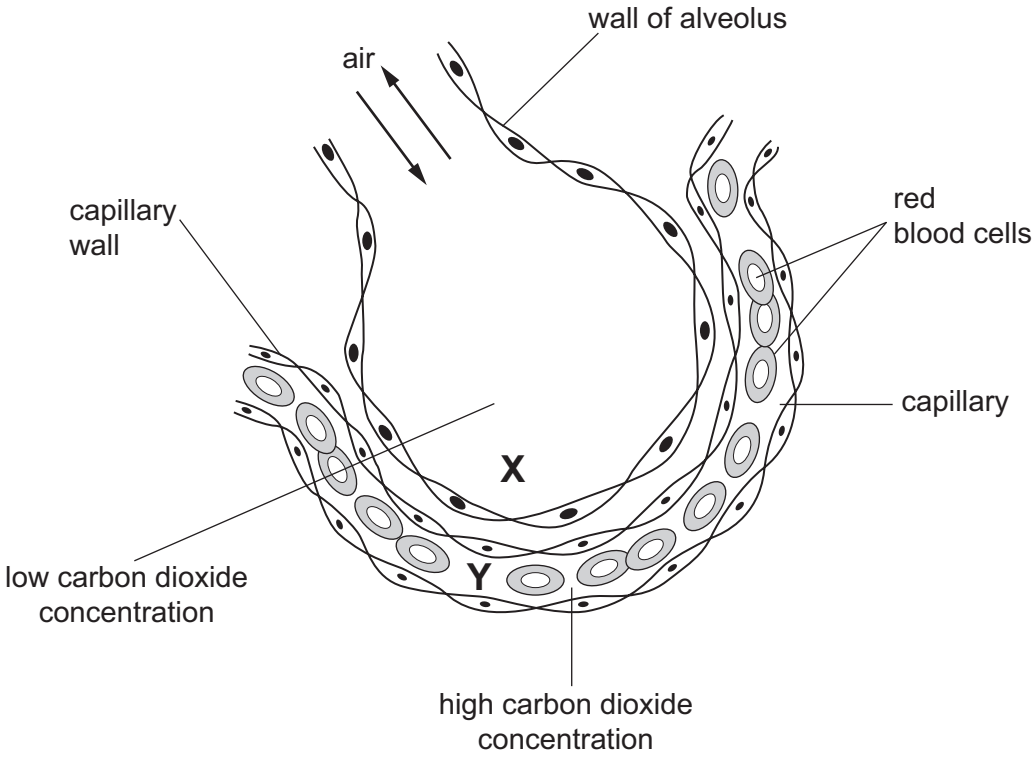
A for the maintenance of the temperature of the cell sap

B to increase the surface area of the cells

C to increase the volume of the cell sap

D to provide a place for cell nuclei

7 The diagram shows a section through an alveolus and through a capillary.



How does carbon dioxide move from **Y** to **X**?

A by diffusion

B by osmosis

C by translocation

D by transpiration

8 Which part of a plant root hair is partially permeable?

A the cell sap

B the cell surface membrane

C the cell vacuole

D the cell wall

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

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

What did the fruit contain?

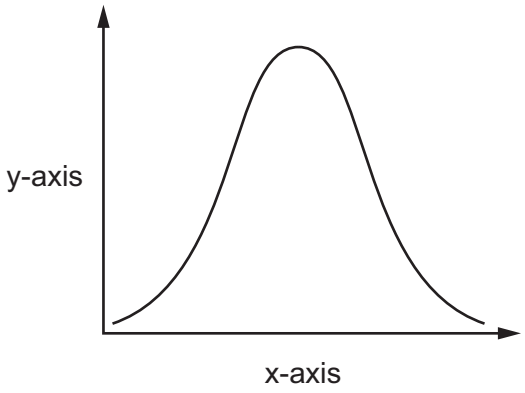
A fat and reducing sugar

B fat and starch

C protein and reducing sugar

D protein and starch

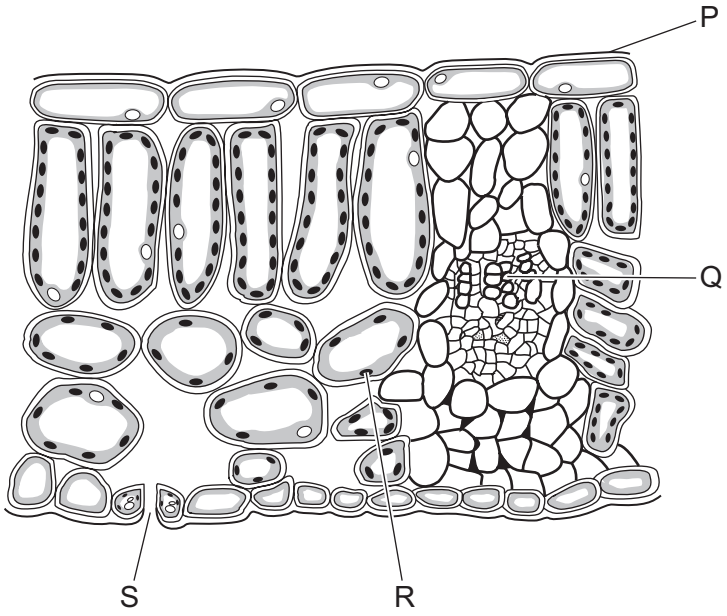
10 An experiment was carried out to investigate the effect of pH on enzyme action. The graph shows the results.



What are the labels for the x-axis and the y-axis?

	x-axis	y-axis
A	pH	rate of reaction
B	pH	time
C	rate of reaction	pH
D	time	pH

11 The diagram shows a section through a leaf.



What are structures P, Q, R and S?

	P	Q	R	S
A	chloroplast	phloem	palisade tissue	xylem
B	cuticle	xylem	chloroplast	stoma
C	phloem	palisade tissue	cuticle	stoma
D	xylem	chloroplast	phloem	cuticle

12 A lack of which dietary component can result in constipation?

A fat

B fibre (roughage)

C carbohydrate

D protein

13 A woman requires more calcium in her diet when she is pregnant.

Which statement explains why?

A bone growth in the fetus

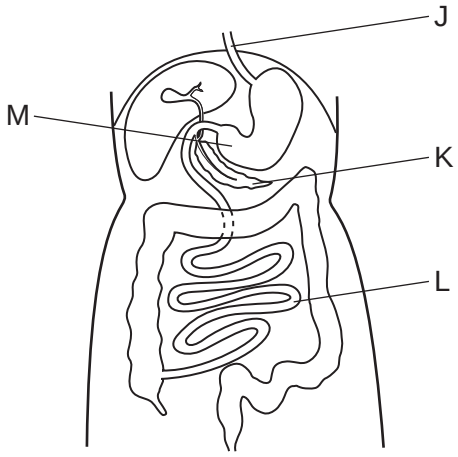
B muscle growth in the fetus

C production of haemoglobin in the fetus

D to provide energy for the fetus

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14 The diagram shows part of the alimentary canal.



Which row correctly identifies the structures labelled J to M?

	J	K	L	M
A	oesophagus	pancreas	small intestine	stomach
B	pancreas	small intestine	stomach	oesophagus
C	small intestine	stomach	oesophagus	pancreas
D	stomach	oesophagus	pancreas	small intestine

15 The diagram shows the pathway of water from the soil through a plant.

soil → X → Y → Z → mesophyll cells

Which cells are represented by X, Y and Z?

	X	Y	Z
A	root hair cells	root cortex cells	xylem
B	root hair cells	xylem	root cortex cells
C	xylem	root cortex cells	root hair cells
D	xylem	root hair cells	root cortex cells

16 What will **not** affect the rate of transpiration?

A humidity of the atmosphere

B number of open stomata

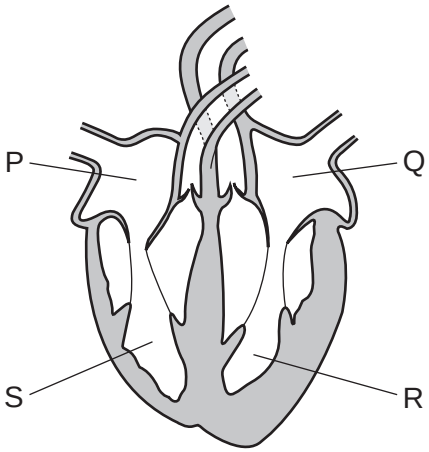
C rate of respiration

D temperature

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[Turn over

17 The diagram shows the human heart.



In which order does blood pass through the chambers during a complete circuit of the body after it returns from the lungs?

A Q → R → S → P

B Q → R → P → S

C P → S → Q → R

D P → S → R → Q

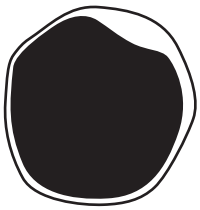
18 The diagrams show some components of the blood of a mammal.

Which component causes the blood to start clotting?

A



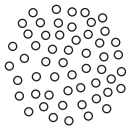
B



C



D



19 What is an indirect method of transmitting disease?

A body fluid

B blood

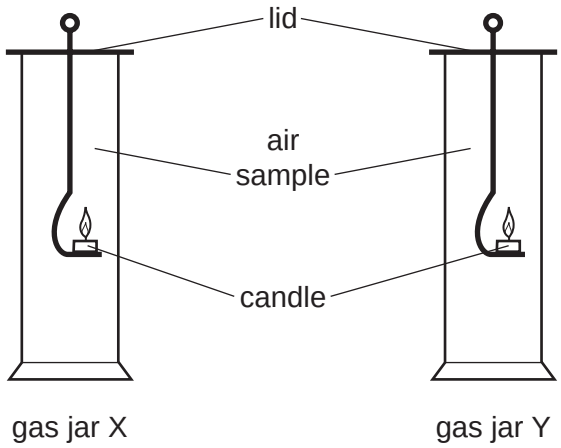
C food

D skin contact between people

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20 A sample of expired air is collected in a gas jar. Another gas jar contains normal atmospheric air.

A lighted candle is placed inside each gas jar as shown. The time taken for each flame to go out is measured. As the candles burn they use up the oxygen available in the jar.



The table shows the results of this experiment.

gas jar	time for candle flame to go out / s
X	15
Y	9

What is an explanation of the difference between the results in jars X and Y?

A Jar X contains atmospheric air which has more carbon dioxide.

B Jar X contains expired air which has more carbon dioxide.

C Jar Y contains atmospheric air which has less oxygen.

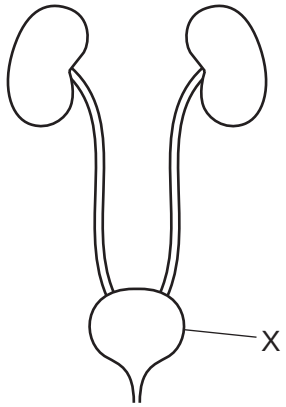
D Jar Y contains expired air which has less oxygen.

21 Which row describes anaerobic respiration?

	energy released	oxygen required	waste products
A	a little	no	lactic acid
B	a little	yes	carbon dioxide and water
C	a lot	no	lactic acid
D	a lot	yes	carbon dioxide and water

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22 The diagram shows the excretory system.



What is structure X?

A bladder

B kidney

C ureter

D urethra

23 What is the correct sequence in a reflex action?

A receptor → stimulus → motor neurone → relay neurone → sensory neurone → effector

B receptor → stimulus → sensory neurone → relay neurone → motor neurone → effector

C stimulus → receptor → motor neurone → relay neurone → sensory neurone → effector

D stimulus → receptor → sensory neurone → relay neurone → motor neurone → effector

24 In 1921, Banting and Best extracted a substance from the pancreas of an animal. The substance was injected into children whose blood sugar concentrations were too high. The children's blood sugar concentrations were returned to normal.

Which substance in the pancreatic extract would return the children's blood sugar concentrations to normal?

A adrenaline

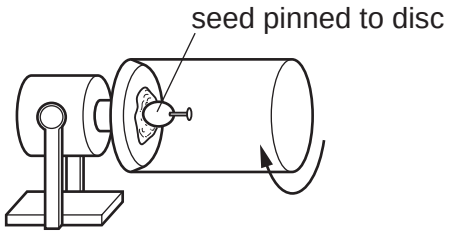
B insulin

C glucose

D oestrogen

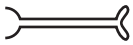
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25 A seed is placed and grown on a rotating disc, as shown.



Which diagram shows the appearance of the seedling shoot after seven days?

A



B



C



D



26 Which organ is the site of break down of alcohol in the human body?

A bladder

B kidney

C liver

D stomach

27 Alcohol is a drug.

Which statement is correct?

A It can cause COPD.

B It is a depressant.

C It is not addictive.

D It speeds up reaction times.

28 The following statements give information about the reproduction of different organisms.

1 Daffodil plants produce genetically identical bulbs that grow into a new plant the following year.

2 In summer, female aphids produce genetically identical offspring without fertilisation by a male.

3 Most banana plants are genetically identical because they were produced from one parent plant.

Which statements are examples of asexual reproduction?

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

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29 Which stages in sexual reproduction occur in both flowering plants and human reproduction?

1 Gametes are made by meiosis.

2 Gametes fuse to form a zygote.

3 The male gamete moves to the female gamete.

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

30 Which part of the female reproductive system produces oestrogen?

A cervix

B ovary

C oviduct

D uterus

31 Which hormone is responsible for the development of secondary sexual characteristics?

A FSH

B LH

C oestrogen

D progesterone

32 A length of DNA codes for a protein.

What is this a definition of?

A a gene

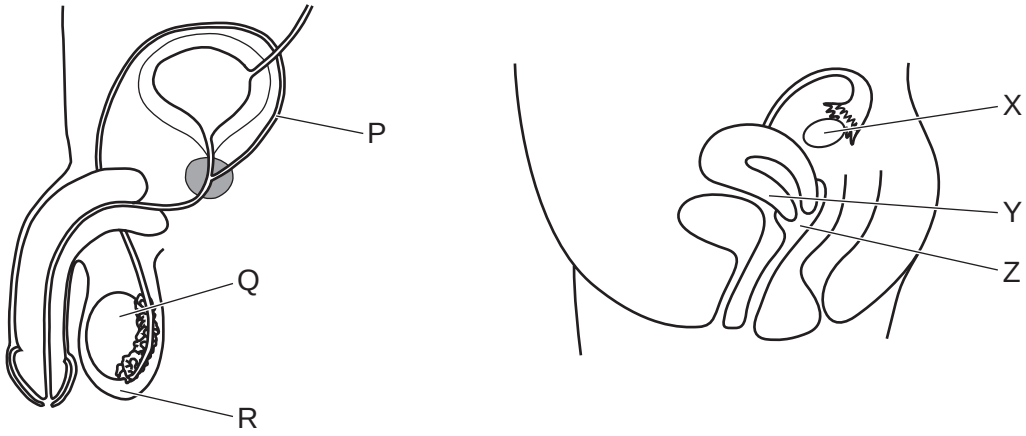
B an amino acid

C an X chromosome

D a Y chromosome

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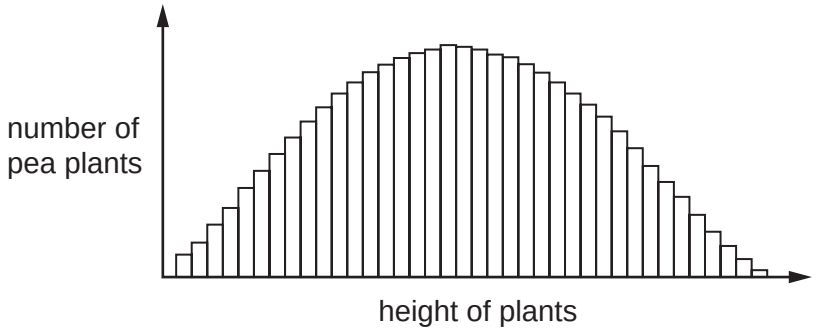
33 The diagrams show human male and female reproductive organs.



Where does meiosis take place?

A P and X **B** Q and X **C** Q and Y **D** R and Z

34 The bar chart shows the heights of pea plants grown from 500 pea seeds.



What variation do the plants show?

	continuous	discontinuous
A	✓	✓
B	✓	✗
C	✗	✓
D	✗	✗

35 The picture shows a fox that lives in the desert.



Which adaptation does the fox have for living in the desert?

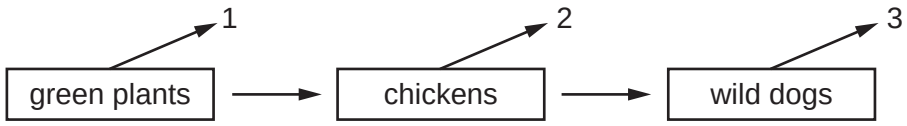
A eyes at front of head to help judge distance

B large ears to increase heat loss

C long bushy tail for balance

D sharp teeth to catch prey

36 The diagram shows a simple food chain.



Which process releases the energy that is lost at 1, 2 and 3?

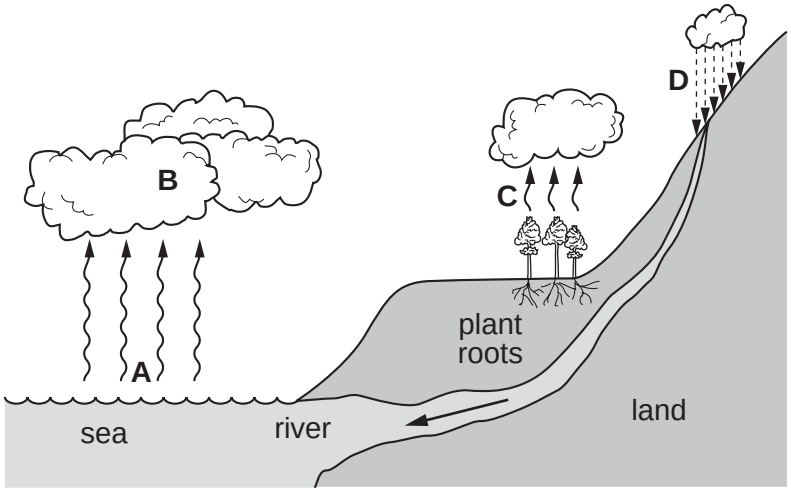
A ingestion

B photosynthesis

C respiration

D transpiration

37 Which labelled stage in the water cycle shows precipitation?



38 What is the name of the structure that separates the left and right ventricles of the heart?

A atrium

B septum

C vena cava

D valve

39 What is a source of air pollution?

A herbicides

B methane

C untreated sewage

D water vapour

40 Which process does **not** change the carbon dioxide level in the air?

A decomposition

B feeding

C photosynthesis

D respiration

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