Cambridge Assessment International Education

Cambridge IGCSE®

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER			

BIOLOGY **0610/01**

Paper 1 Multiple Choice (Core) **For examination from 2020**

SPECIMEN PAPER

45 minutes

Additional materials: Multiple choice answer sheet
Soft clean eraser
Soft pencil (type B or HB is recommended)

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.

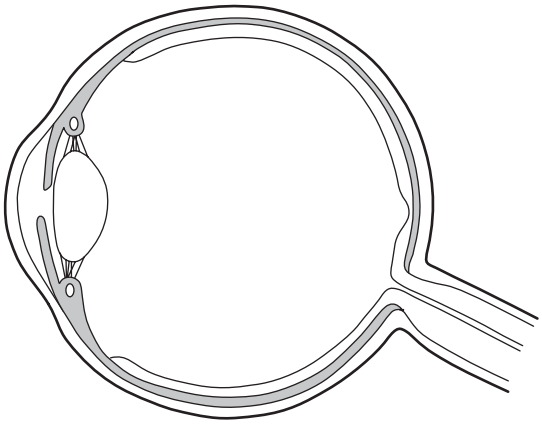
Read the instructions on the answer sheet very carefully.

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 document consists of **16** printed pages.

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1 The diagram shows a structure found in the human body.



What is this structure an example of?

A an organ

B an organism

C an organ system

D a tissue

2 Which system is used for naming species?

A binomial

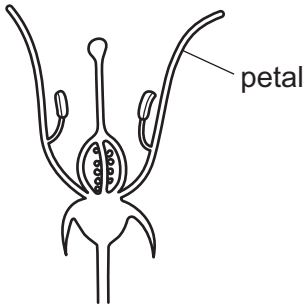
B conservation

C dichotomous

D natural selection

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3 The diagram shows a section through a flower.



Using the key, identify this flower.

1 sepals present ..... go to 2

sepals not present ..... go to 3

2 stamens attached to petals ..... **A**

stamens not attached to petals ..... **B**

3 stigma above anthers ..... **C**

stigma below anthers ..... **D**

4 The table shows some features of animals.

Which animal could be a bird?

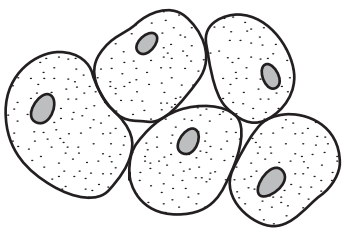
	feature			
	feathers	gills	hair	wings
A	×	✓	✓	×
B	✓	✓	×	×
C	✓	×	×	✓
D	×	×	✓	✓

key

✓ = present

× = not present

5 The diagram shows some liver cells as they appear under a microscope.



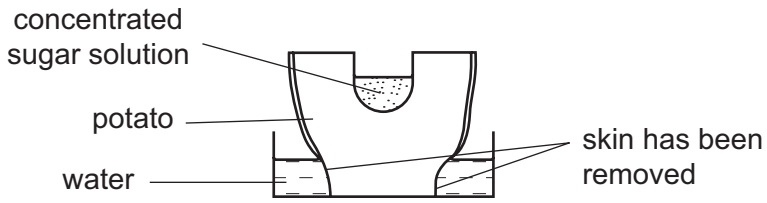
How many cell walls can be seen?

A 0 **B** 2 **C** 5 **D** 10

6 Which row shows the most likely number of chloroplasts in three types of cell in a leaf?

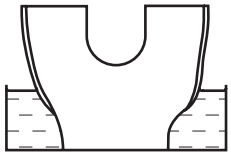
	epidermis	mesophyll	vascular bundle cell
A	0	6	17
B	0	17	0
C	17	6	0
D	17	0	6

7 The diagram shows an experiment using an uncooked potato. The skin of the potato was removed as shown.

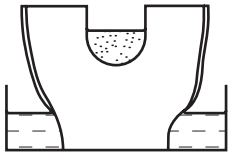


Which diagram shows the result of the experiment after 24 hours?

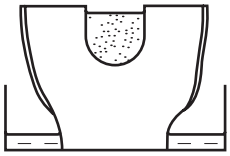
A



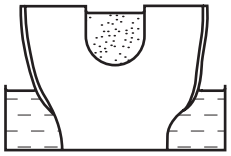
B



C



D



8 A student draws a diagram of a plant cell.

The diagram is 40 mm in width. The plant cell is 0.02 mm in width.

What is the magnification of the student's drawing?

A ×0.005

B ×0.08

C ×200

D ×2000

9 On a dry, sunny day, how does water vapour move through the stomata of a leaf?

A into the leaf by diffusion

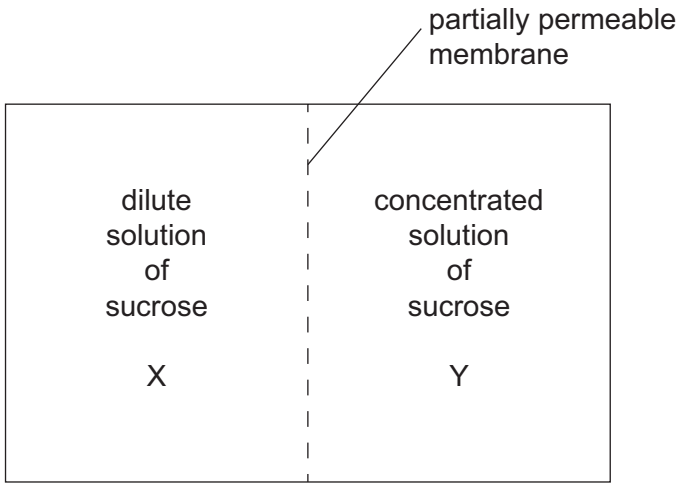
B into the leaf by respiration

C out of the leaf by diffusion

D out of the leaf by respiration

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10 The diagram shows two solutions that are separated by a partially permeable membrane.



In which direction will most water molecules move in relation to their concentration gradient?

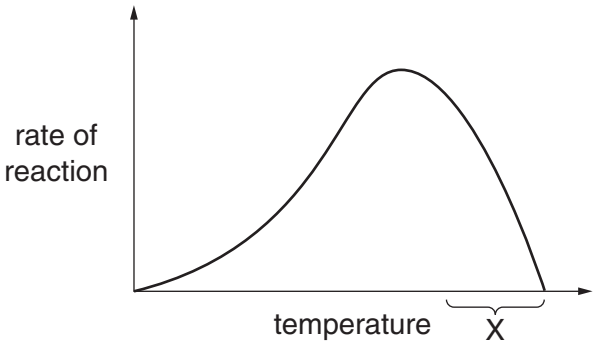
A from X to Y against their concentration gradient

B from X to Y down their concentration gradient

C from Y to X against their concentration gradient

D from Y to X down their concentration gradient

11 The graph shows how the rate of an enzyme-controlled reaction changes with temperature.



What describes the shape of the graph within the temperature range marked X?

A The rate of reaction decreases.

B The rate of reaction increases then decreases.

C The rate of reaction reaches a maximum.

D The reaction is occurring at the optimum temperature.

12 Six test-tubes were set up at different pH values. They each contained the same quantity of starch and amylase in water. The table shows the time taken for the reaction to be completed in each test-tube.

pH	1	3	5	7	9	11
time to be completed / s	95	64	42	5	35	66

At which pH does the amylase work best?

A pH 1 **B** pH 5 **C** pH 7 **D** pH 11

13 What are the chemical elements found in carbohydrates?

A carbon, hydrogen and oxygen only

B carbon, hydrogen, oxygen and nitrogen only

C carbon, hydrogen, oxygen and sulfur only

D carbon, hydrogen, oxygen, nitrogen and sulfur only

14 A protease is added to a cloudy suspension of protein in a test-tube and kept at 37 °C.

After eight minutes, the suspension changes from cloudy to transparent.

Which product, or products, will now be present in the test-tube?

A amino acids

B fatty acids

C glycerol

D simple sugars

15 The following can be used to write a word equation for photosynthesis.

1 carbon dioxide and water

2 light and chlorophyll

3 glucose and oxygen

Which shows a correct word equation for photosynthesis?

A 1 → 2 in the presence of 3

B 1 → 3 in the presence of 2

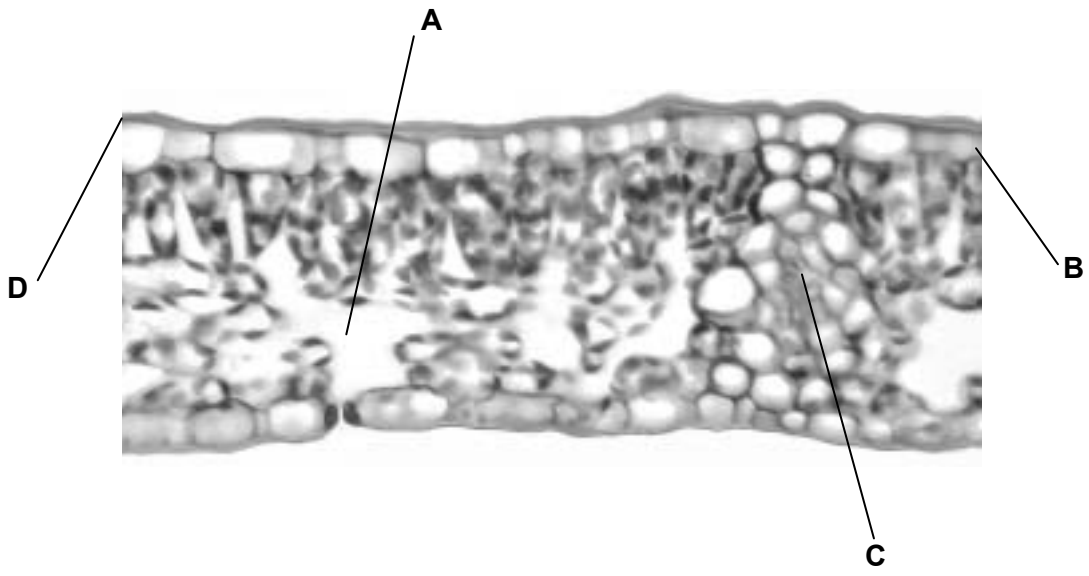
C 2 → 3 in the presence of 1

D 3 → 1 in the presence of 2

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16 The photograph shows a section through the leaf of a plant.

Which label shows the position of the cuticle?



17 What is a symptom of scurvy?

A bleeding gums

B breathlessness

C diarrhoea

D pain in joints

18 What is an appropriate treatment for severe diarrhoea?

A avoiding drinking

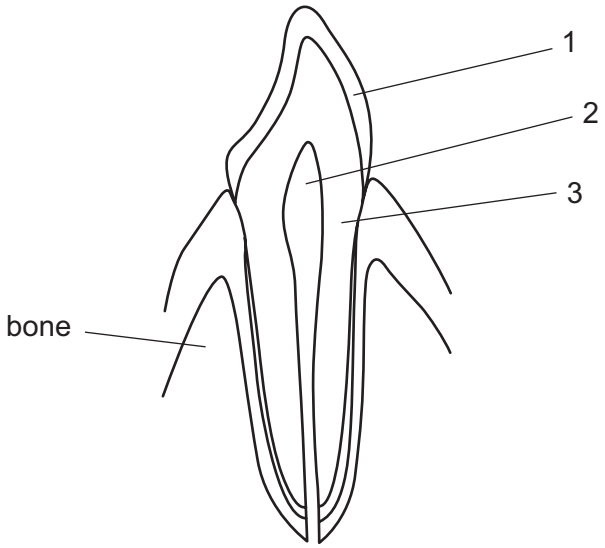
B avoiding high-fibre foods

C drinking a dilute solution of salt and glucose

D eating high-fat foods

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19 The diagram shows a tooth.

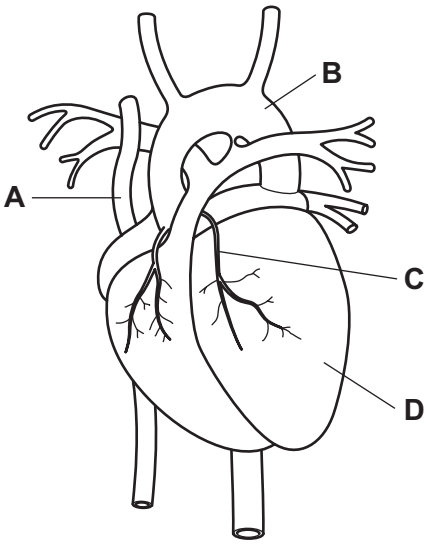


What are the parts labelled 1, 2 and 3?

	1	2	3
A	dentine	enamel	pulp
B	enamel	dentine	pulp
C	enamel	pulp	dentine
D	pulp	dentine	enamel

20 The diagram shows a human heart and some of its major blood vessels.

Blockage of which labelled part is a cause of coronary heart disease?



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21 These actions may be important in controlling the spread of disease.

1 washing hands after going to the toilet

2 disposing of waste frequently

3 using separate cutting boards for meat and salad

4 disposing of raw sewage into a river

Which would help control the spread of disease?

A 1, 2, 3 and 4

B 1, 2 and 3 only

C 2 and 3 only

D 4 only

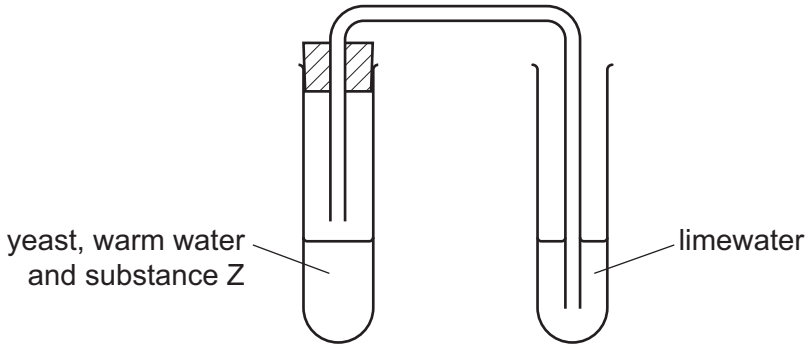
22 The table shows some of the features of respiration.

Which row is correct for anaerobic respiration?

	amount of energy released per glucose molecule	chemical reaction	releases carbon dioxide
A	high	always the same	sometimes
B	low	different in different organisms	sometimes
C	high	different in different organisms	always
D	low	always the same	always

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23 The diagram shows some apparatus used to investigate respiration. Yeast, warm water and substance Z were put into a test-tube. After a while, the limewater began to go cloudy.



What is substance Z?

A alcohol

B glucose

C nitrogen

D oxygen

24 The diagram shows someone blowing up a balloon.



How do the proportions of gases in the air inside the balloon compare with the air outside the balloon?

	carbon dioxide	oxygen	water vapour
A	less	more	more
B	less	more	less
C	more	less	more
D	more	less	less

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25 Which organ produces urea?

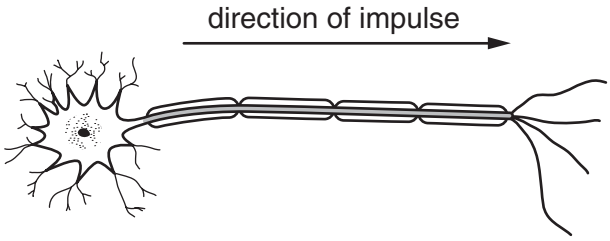
A bladder

B kidney

C liver

D pancreas

26 The diagram shows a neurone carrying an impulse.



Which row describes the type of neurone and the direction of impulse?

	type of neurone	direction of impulse
A	motor	towards the spinal cord
B	motor	away from the spinal cord
C	sensory	towards the spinal cord
D	sensory	away from the spinal cord

27 Which of the following can be an effector in a reflex arc?

A a gland

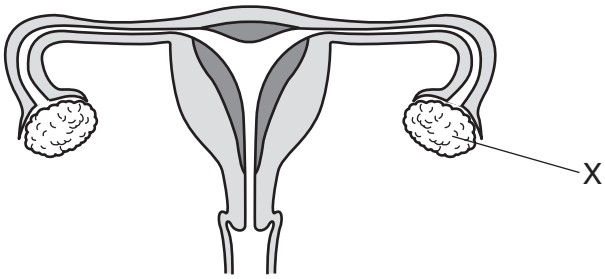
B a light receptor

C the brain

D the spinal cord

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28 The diagram shows the female reproductive system.



What is the function of the part labelled X?

A gamete production and hormone secretion

B gamete production only

C hormone secretion only

D zygote production and hormone secretion

29 The diagram shows the menstrual cycle of a woman during the month of September.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

key

= ovulation

= menstruation

Why can fertilisation not take place if sperms are released into the vagina on 8th September?

A Sperms are washed out of the female uterus by the menstrual flow.

B Sperms can survive in the female reproductive system for only 3 or 4 days.

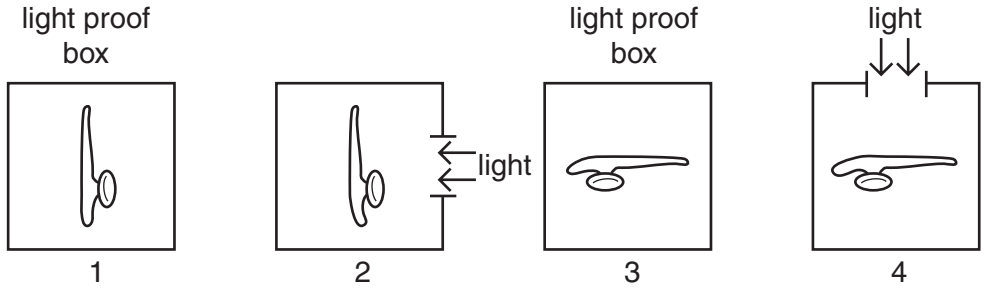
C Sperms must be released after ovulation for fertilisation to take place.

D The uterus lining is washed out of the female body during menstruation.

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30 Some roots are known to be gravitropic.

Which pair of diagrams show a controlled experiment to find out if these roots are also phototropic?



A 1 and 2

B 1 and 3

C 2 and 3

D 2 and 4

31 What term is used for the transfer of a gene from one organism to another?

A artificial selection

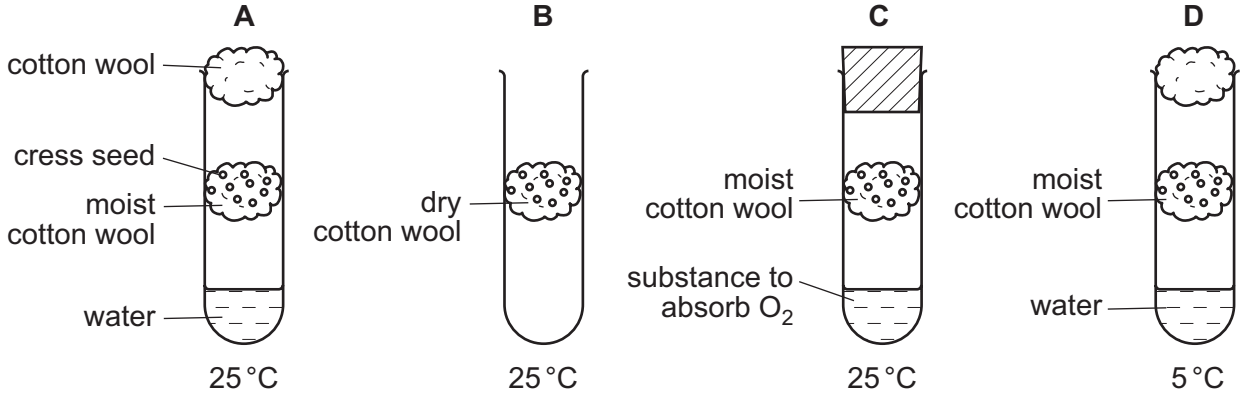
B genetic engineering

C mutation

D natural selection

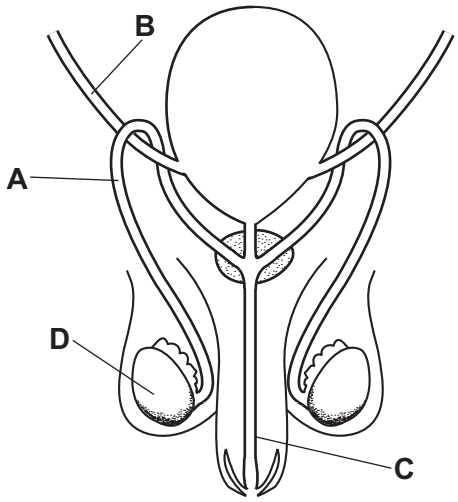
32 In an experiment to investigate the effects of various environmental factors on germination, four boiling tubes were set up as shown.

In which tube would the seeds germinate most quickly?



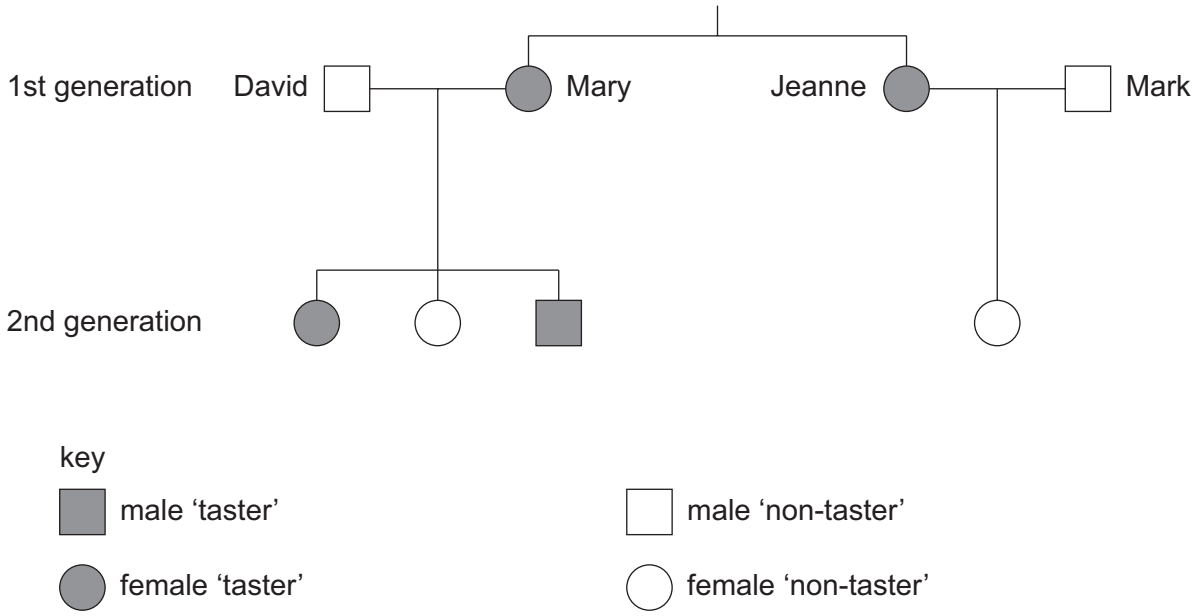
33 The diagram shows some parts of the male reproductive system.

Which part is cut during a vasectomy?



34 The diagram shows a family tree and the inheritance of the ability to taste a certain substance.

The allele for the ability to taste this substance is dominant.



Which statement about the genotypes of the sisters Mary and Jeanne is correct?

A Mary is heterozygous and Jeanne is homozygous.

B Mary is homozygous and Jeanne is heterozygous.

C They are both heterozygous.

D They are both homozygous.

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35 The diagram shows an eagle.



Eagles have hooked beaks that help them to ingest food.

What is this an example of?

A adaptation

B assimilation

C nutrition

D variation

36 In which order do organisms occur in the food chain?

A carnivore → herbivore → producer

B herbivore → carnivore → producer

C producer → carnivore → herbivore

D producer → herbivore → carnivore

37 How is energy transferred between organisms in a food chain?

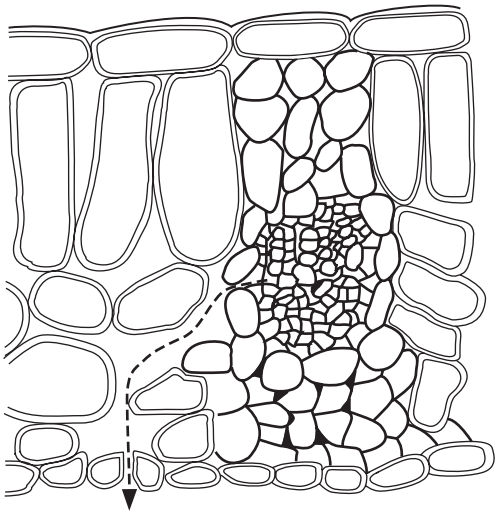
A combustion

B ingestion

C photosynthesis

D respiration

38 The diagram shows part of a section through a leaf in daylight.



What substance follows the path of the arrow out of the leaf?

A carbon dioxide

B energy

C oxygen

D water

39 Which factors, if present, may cause a population of animals to decrease?

	predation	disease
A	✓	✓
B	✓	×
C	×	×
D	×	✓

40 Modern technology has resulted in the production and use of insecticides.

Which statement is a **false** description of insecticides?

A Insecticides can affect food chains.

B Insecticides can cause pollution.

C Insecticides improve yields.

D Insecticides target weeds.

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