UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

BIOLOGY **0610/01**

Paper 1 Multiple Choice

October/November 2006

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, highlighters, 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.

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.

This document consists of **17** printed pages and **3** blank pages.

1 Living animals release carbon dioxide.

This is an example of which life process?

A excretion

B movement

C nutrition

D sensitivity

2 Which of these features is used to classify organisms as flowering plants?

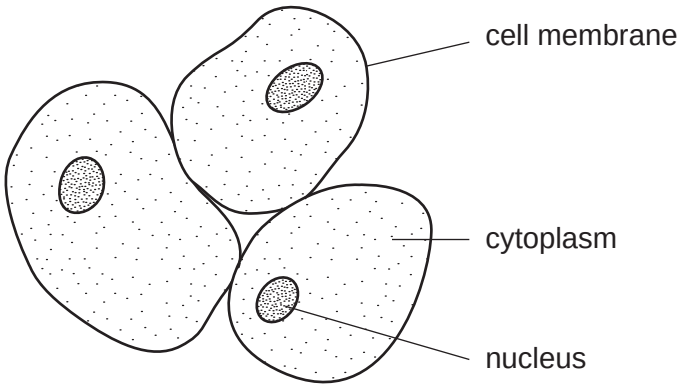
A roots with hairs

B seeds within fruits

C single-celled spores

D underground stems

3 The diagram shows some cells.



What are these cells?

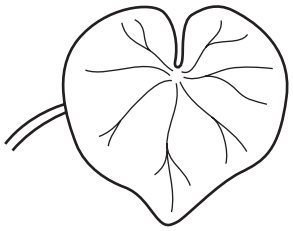
A liver cells

B palisade cells

C red blood cells

D white blood cells

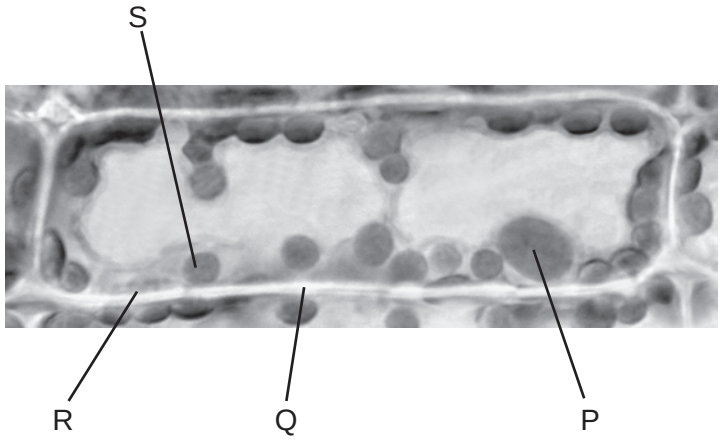
4 The diagram shows a leaf.



Use the key to identify the leaf.

1	leaf with several small leaflets ……	go to 2
	leaf with one large leaf blade……	go to 3
2	leaflets broad and flat ……..	**A**
	leaflets narrow and hair-like ……	**B**
3	leaf with smooth edge ……..	**C**
	leaf with toothed edge ……..	**D**

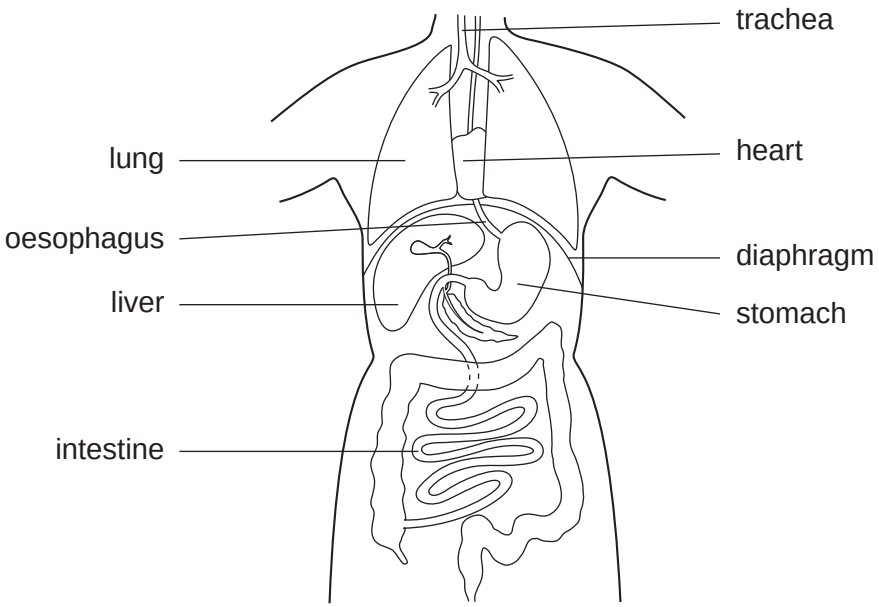
5 The photomicrograph shows a cell from a type of pondweed.



Which parts labelled on the diagram indicate that this is a plant cell?

A P and R **B** P and S **C** Q and R **D** Q and S

6 The diagram shows some of the main organs in the human body.



Which group of organs belongs to the same organ system?

A diaphragm, oesophagus, trachea

B heart, liver, lungs

C heart, stomach, trachea

D oesophagus, intestine, stomach

7 Why is the epidermis of a leaf an example of a tissue?

A The cells all have a similar structure and function.

B The cells allow light to pass through.

C The cells allow water to enter them by osmosis.

D The cells are covered by a waxy cuticle.

8 On a dry, sunny day, water vapour moves through the stomata of a leaf.

Which phrase describes this movement?

A into the leaf by diffusion

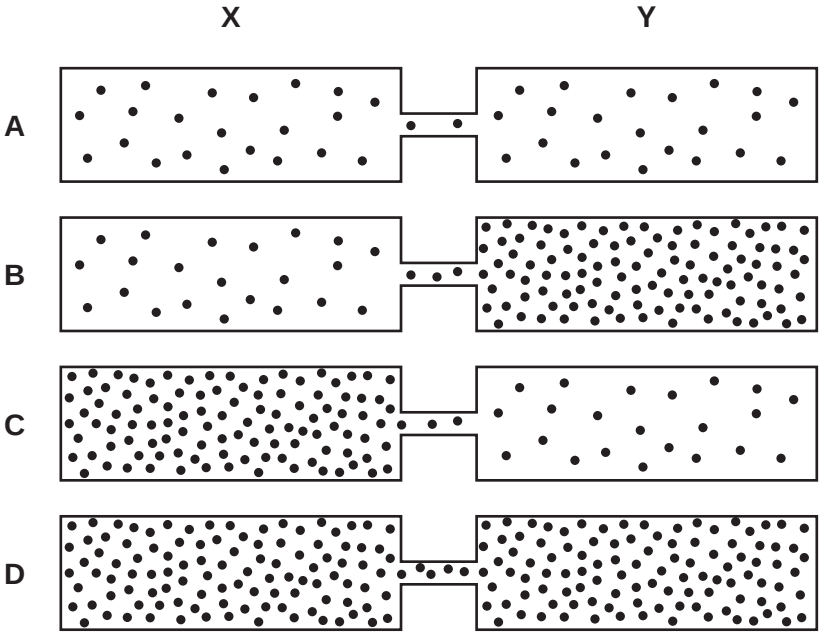
B into the leaf by osmosis

C out of the leaf by diffusion

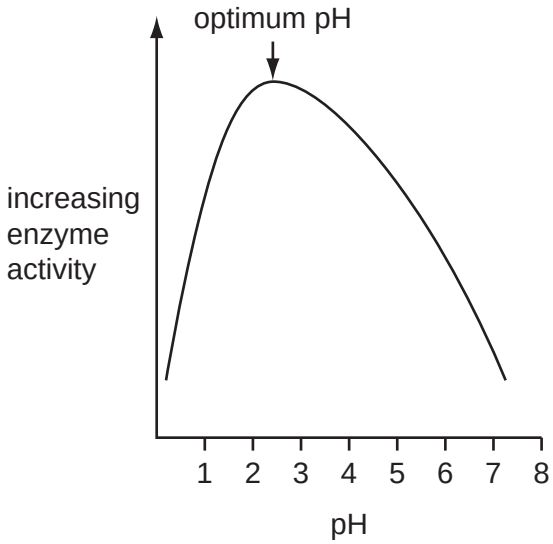
D out of the leaf by osmosis

9 The dots represent molecules of a gas in four tubes.

In which tube do more molecules move from **X** to **Y** than in the opposite direction?



10 The graph shows the results of experiments in which the activity of an enzyme was measured at different pH values.



In which part of the alimentary canal would this enzyme be likely to work?

A mouth cavity

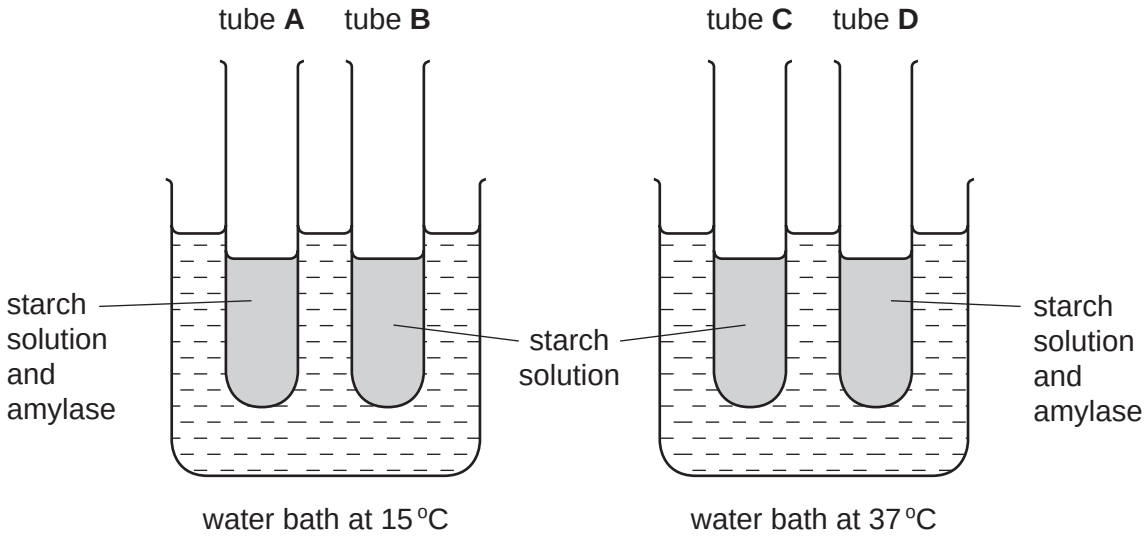
B oesophagus

C small intestine

D stomach

11 The apparatus shown in the diagram was used for an experiment on starch digestion.

Which tube would contain most sugar after 20 minutes?



12 The table shows four substances and the parts of the plant to which they are transported.

	substance	part of plant
1	amino acids	flower buds
2	carbon dioxide	leaf cells
3	sucrose	root cells
4	water	stomata

Which are examples of translocation?

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

13 In humans, where does most absorption of digested food take place?

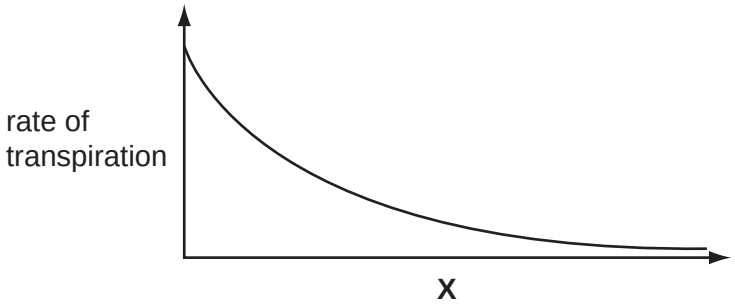
A colon

B kidney

C liver

D small intestine

14 The graph shows how the rate of transpiration is affected by **X**.



What is **X**?

A humidity

B light intensity

C soil moisture

D temperature

15 The table shows nutrients found in a biscuit.

Which nutrient needs no digestion?

A	fat	3.0g
B	glucose	2.8g
C	protein	3.5g
D	starch	5.5g

16 By which process is food moved through the alimentary canal?

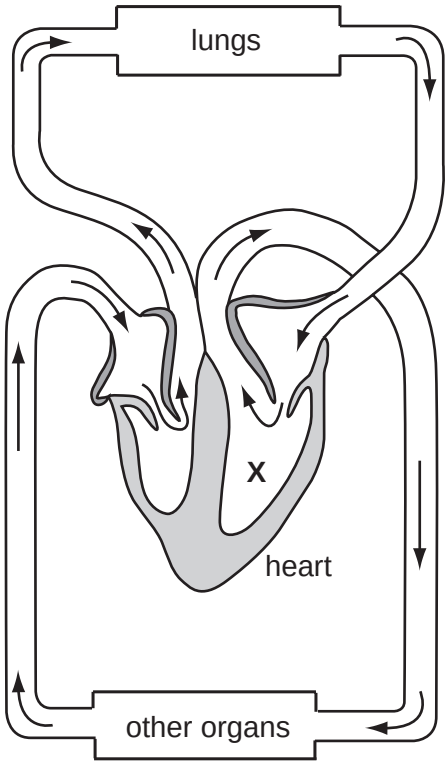
A assimilation

B digestion

C ingestion

D peristalsis

17 The diagram shows the circulation of blood in the body, through the heart, lungs and other organs.



What is the name of **X**?

A left atrium (auricle)

B right atrium (auricle)

C left ventricle

D right ventricle

18 What is produced during anaerobic respiration in muscles?

	alcohol	carbon dioxide	lactic acid
A	✓	✓	✗
B	✗	✓	✓
C	✗	✓	✗
D	✗	✗	✓

19 Which chemical contains energy that is released in aerobic respiration?

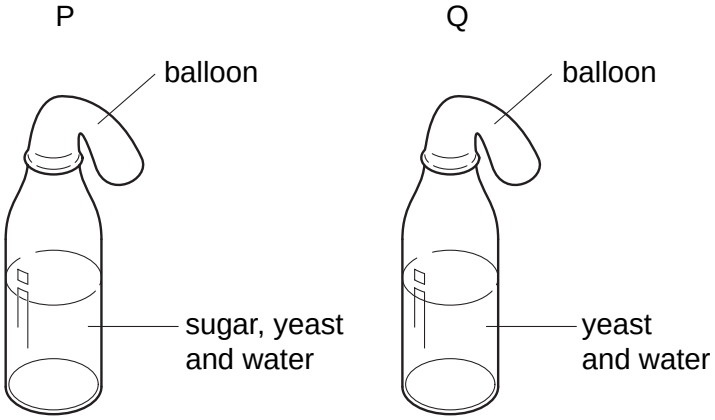
A carbon dioxide

B glucose

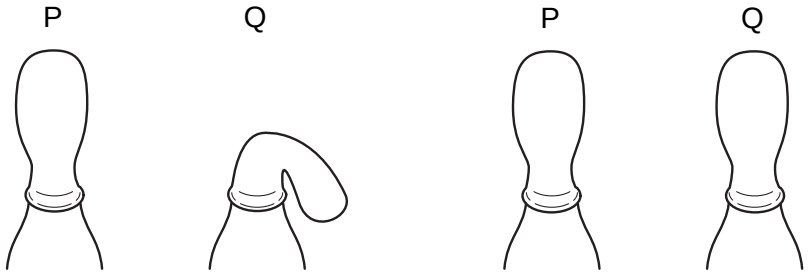
C oxygen

D water

20 In an experiment to investigate anaerobic respiration, two bottles are set up in a warm room, as shown in the diagram.

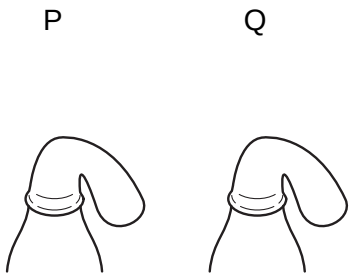


What would happen to each balloon after one day?

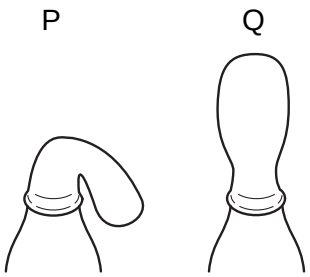


A

B



C



D

21 What describes the excretion of urea?

	removal of undigested food	removal of metabolic wastes	removal of substances in excess	removal of toxic products
A	✗	✗	✓	✓
B	✗	✓	✓	✓
C	✓	✗	✗	✓
D	✓	✓	✓	✗

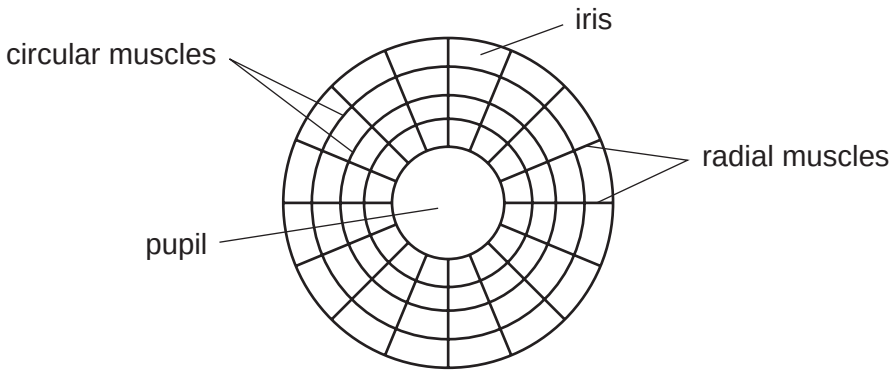
key
✓ true
✗ not true

22 The average percentage of water in human urine is 96 %. This percentage changes when conditions change.

Which set of conditions will make the percentage of water in the urine decrease most?

	conditions		
	temperature of the surroundings	amount of activity	volume of water drunk
A	low	low	high
B	low	high	low
C	high	low	high
D	high	high	low

23 The diagram shows the muscles which control the size of the pupil in an eye.



How do the muscles make the pupil larger?

	circular muscles	radial muscles
A	contract	contract
B	contract	relax
C	relax	contract
D	relax	relax

24 How often is an egg usually released from the ovaries of a woman?

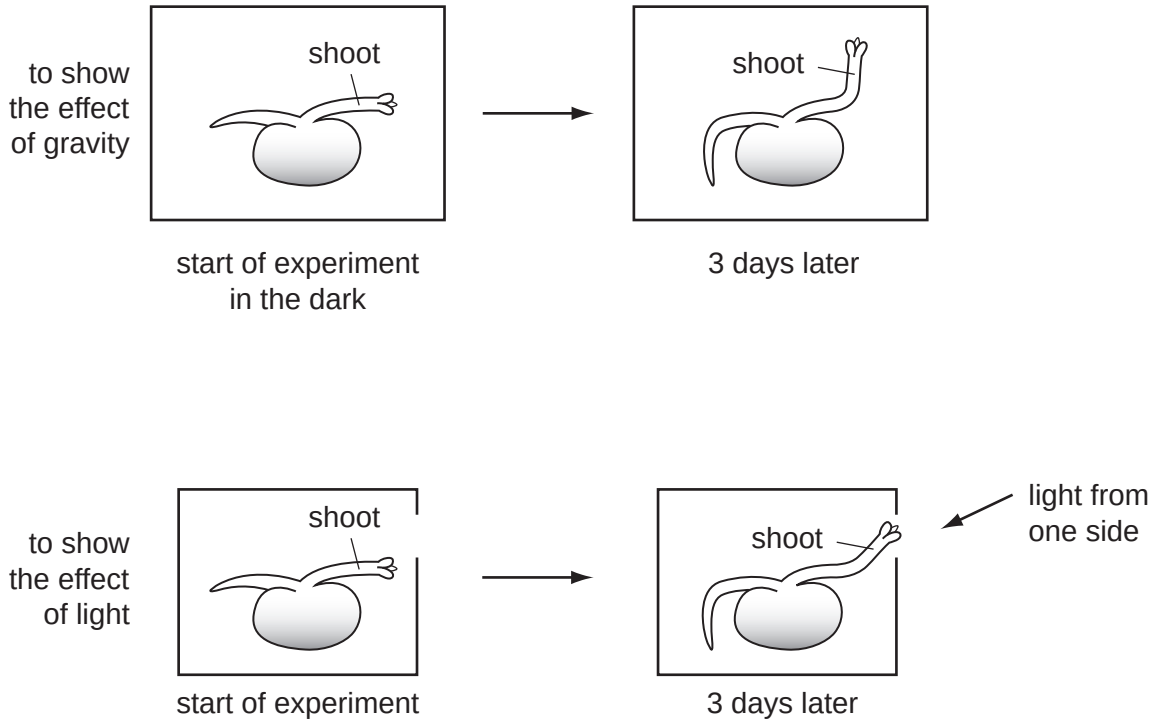
A once a week

B once every 14 days

C once every 28 days

D once every 9 months

25 The diagram shows seedlings in an experiment on the tropic response of shoots to gravity and light.



How has the shoot responded?

	to gravity	to light
A	✓	✓
B	✓	✗
C	✗	✓
D	✗	✗

key

✓ = tropic response shown

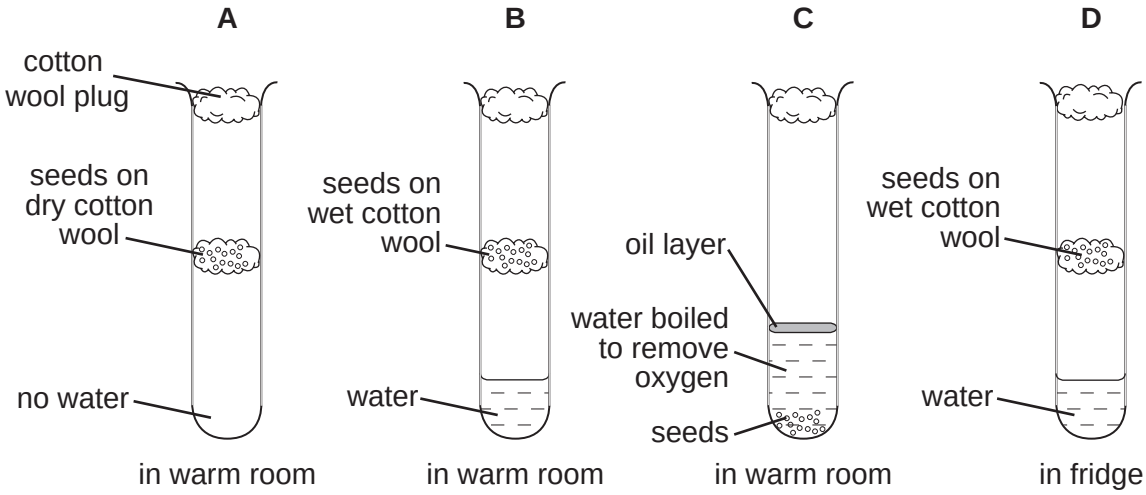
✗ = no tropic response shown

26 Which is correct for sexual reproduction in flowering plants?

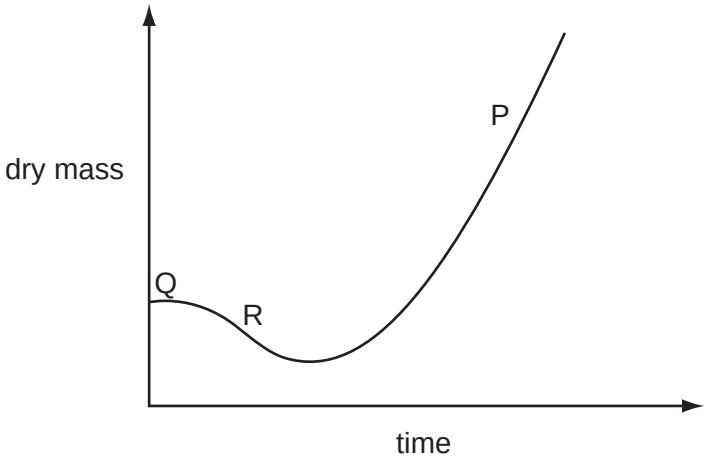
	number of plants involved	number of gametes
A	always 1	more female than male
B	always 1	more male than female
C	1 or 2	more female than male
D	1 or 2	more male than female

27 Four test-tubes were set up as shown in the diagram and left for one week.

In which test-tube would the seeds germinate fastest and grow the most?



28 The graph shows how dry mass of a plant changes with time.



The letters represent three stages in the life cycle of a plant.

Which letter represents each stage?

	green leaves developing	seed	seed germinating
A	P	Q	R
B	Q	R	P
C	R	P	Q
D	Q	P	R

29 Which is a sudden change in a gene or chromosome?

A allele

B genotype

C mutation

D phenotype

30 A gene for the colour of hair in mice has two alleles. B represents the allele for grey hair, and b represents the allele for white hair.

A mouse with grey hair breeds with a mouse with white hair producing four offspring, with genotypes Bb, Bb, bb and bb.

What are the genotypes of the parents?

A both heterozygous

B both homozygous dominant

C one heterozygous and one homozygous dominant

D one heterozygous and one homozygous recessive

31 A heterozygous tall pea plant, **Tt**, is self-fertilised.

What are the offspring most likely to be?

A all tall plants

B all plants of medium height

C one tall plant to three short plants

D three tall plants to one short plant

32 Which term can be described as ‘many different species living together, interacting with each other and with their physical environment’?

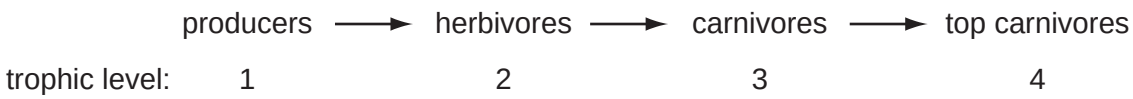
A a food chain

B a food web

C a nutrient cycle

D an ecosystem

33 The diagram shows a food chain.



If the carnivores in trophic level 3 suddenly die out as a result of disease, in which trophic levels will the number of organisms be likely to **decrease**?

A 1 and 2

B 1 and 4

C 2 only

D 2 and 4

34 What is **not** part of the carbon cycle?

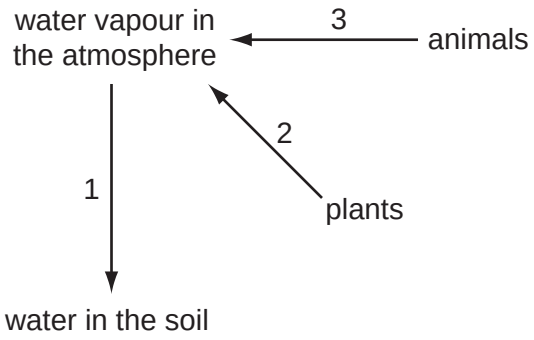
A animals eating plants

B evaporation from a river

C fungi decomposing dead organisms

D plants absorbing carbon dioxide

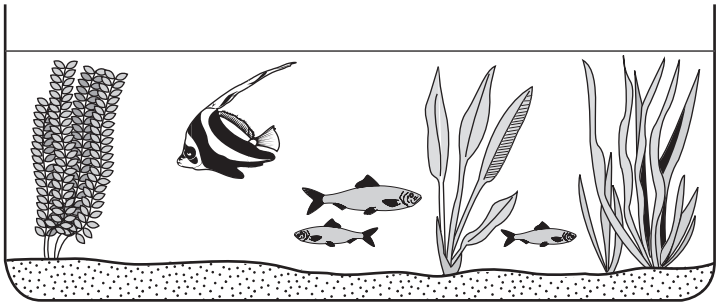
35 The diagram shows a simplified water cycle.



Which processes do arrows 1, 2 and 3 represent?

	respiration	precipitation	transpiration
A	2	1	3
B	3	1	2
C	3	2	1
D	1	3	2

36 The oxygen concentration in this aquarium was measured over a period of time.

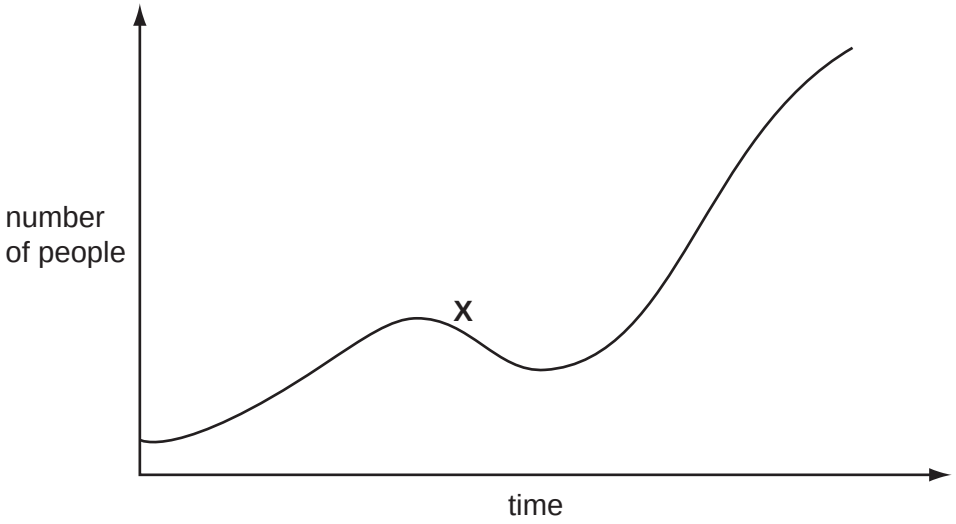


It increased during daylight and decreased at night.

Which processes caused these results?

	oxygen increase (day)	oxygen decrease (night)
A	animal nutrition	decay
B	decay	animal nutrition
C	movement	photosynthesis
D	photosynthesis	respiration

37 The graph shows the changes in a human population.



What could have caused the decrease in population at **X**?

A more medicines available

B introduction of new diseases

C increasing food supply

D decrease in population of predators

38 What is an effect of deforestation?

A more erosion

B more species

C more transpiration

D more variety of habitats

39 Weeds are growing in a crop.

What should be used to remove the weeds?

A artificial fertiliser

B herbicide

C organic manure

D pesticide

40 A pollutant causes a type of plant to lose its green colour.

How will this pollutant affect plants of this type over a long period of time?

A Colourless mutants will survive.

B Larger leaves will be produced.

C There will be no long-lasting effects.

D This type of plant will not survive.

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