UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

HUMAN AND SOCIAL BIOLOGY **5096/12**

Paper 1 Multiple Choice **October/November 2010**

1 hour

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.

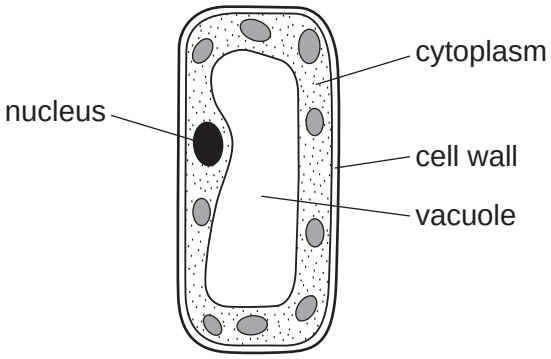
There are **forty** questions on this paper. Answer **all** questions. For each question there are four possible answers **A**, **B**, **C** and **D**.
Choose the **one** you consider correct and record your choice in **soft pencil** on the separate Answer Sheet.

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 **19** printed pages and **1** blank page.

1 The diagram shows a cell as seen through a light microscope.



What type of cell is this?

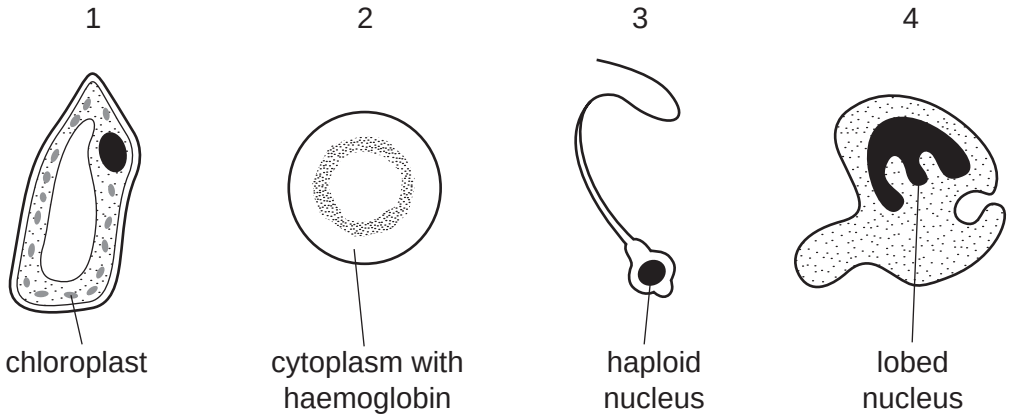
A animal

B bacterium

C plant

D protozoan

2 The diagrams show four types of cell found in organisms.



Which cells are capable of locomotion?

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

3 Which process in the carbon cycle decreases the amount of carbon dioxide in the air?

A combustion

B decomposition

C photosynthesis

D respiration

4 A carbohydrate molecule formed during photosynthesis contains energy.

Where does this energy originally come from?

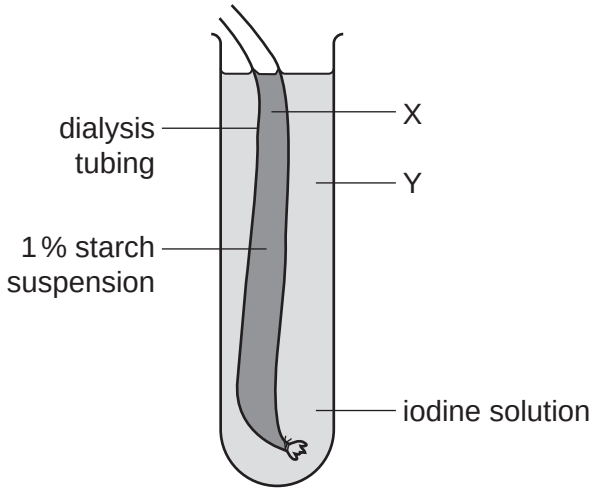
A carbon dioxide

B chlorophyll

C glucose

D sunlight

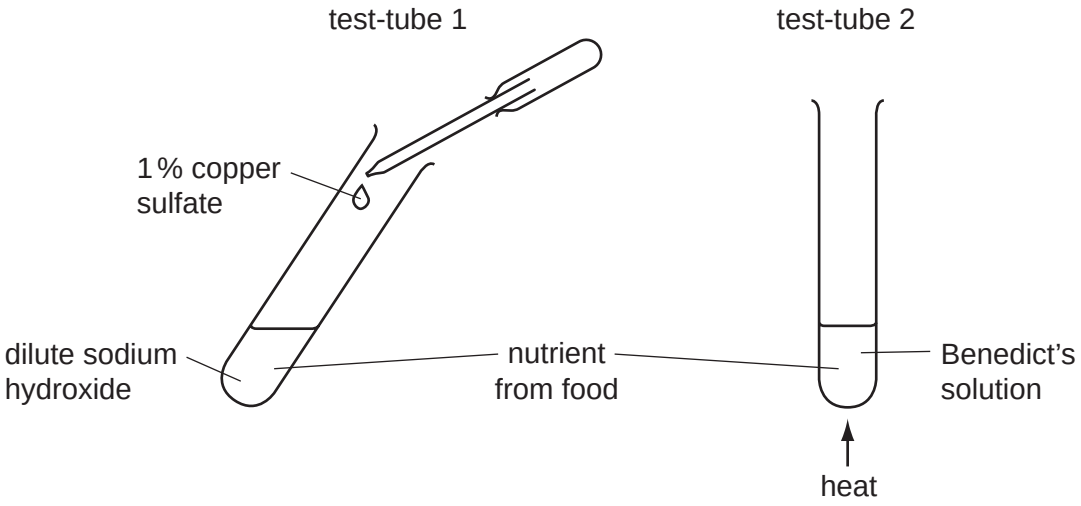
5 The diagram shows dialysis tubing filled with a starch suspension in a tube of iodine solution. Iodine is a small molecule.



What will the colour at X and Y be after an hour?

	X	Y
A	blue / black	blue / black
B	blue / black	yellow
C	yellow	blue / black
D	yellow	yellow

6 Test-tubes 1 and 2 each show a test for a different nutrient.



Which nutrients do these tests identify and which colour shows a positive test?

	test-tube 1	test-tube 2
A	lipids, turn clear to cloudy white	starch, turns yellow to blue
B	protein, turns blue to purple	reducing sugar, turns blue to red
C	protein, turns blue to red	reducing sugar, turns blue to purple
D	reducing sugar, turns blue to red	protein, turns blue to purple

7 What do **all** insects have in common?

A They are vectors of disease.

B They feed by sucking up liquids.

C They have segmented bodies.

D They have wings.

8 What **cannot** be associated with malnutrition?

A constipation

B obesity

C rickets

D ringworm

9 What is required to avoid the development of rickets in children?

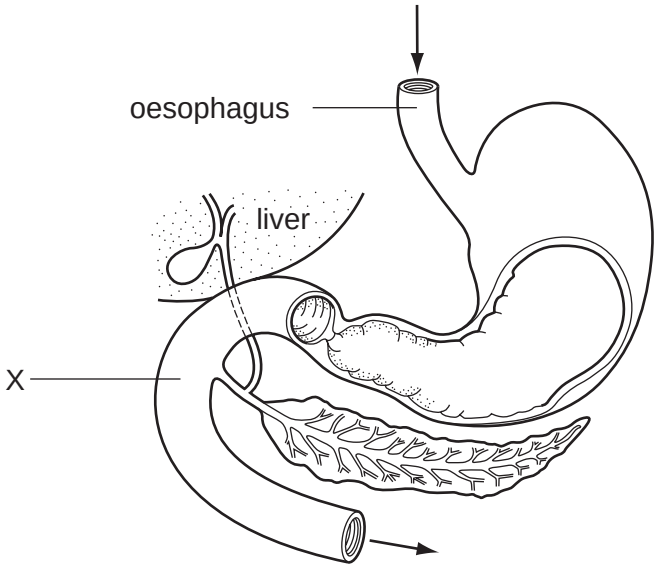
A calcium and vitamin C

B calcium and vitamin D

C iron and vitamin C

D iron and vitamin D

10 The diagram shows part of the alimentary canal.



What happens when bile enters region X?

A Fats are emulsified.

B Enzymes are added from the liver.

C Fat is changed into fatty acids.

D Starch is changed to sugar.

11 Which substance is soluble in water?

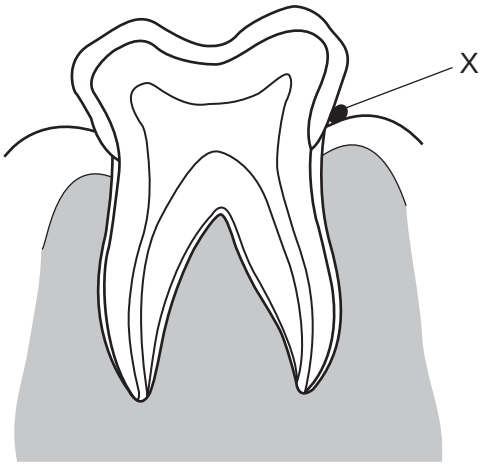
A fatty acids

B glycogen

C vitamin C

D vitamin D

12 The diagram shows a vertical section through a molar tooth.



How does food stuck at X cause damage to the tooth?

A Bacteria digest the solid parts of the tooth.

B Bacteria ferment sugars in the food to acid.

C Food forms an alkali which dissolves the enamel.

D Plaque formed from food increases the pH.

13 What are two symptoms of a heart attack?

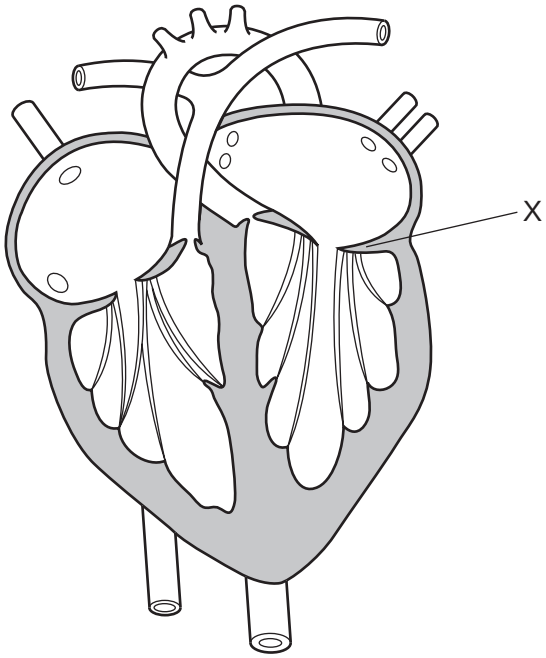
A severe chest pain; death of some heart muscle

B severe chest pain; regular heart beat

C severe lower back pain; blue lips

D severe lower back pain; irregular heart beat

14 The diagram shows a vertical section of the heart.



What causes the valve labelled X to close?

A blood being forced into the ventricle

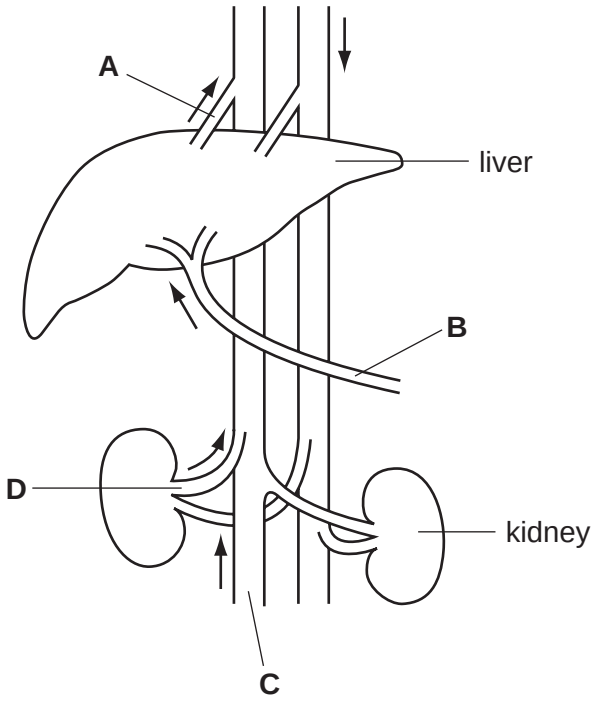
B contraction of the ventricle

C contraction of the atria

D relaxation of the atria

15 The diagram shows the blood supply to various organs.

Which blood vessel carries blood with the highest concentration of urea?



16 Which part of cigarette smoke damages the cleaning mechanism of the lungs?

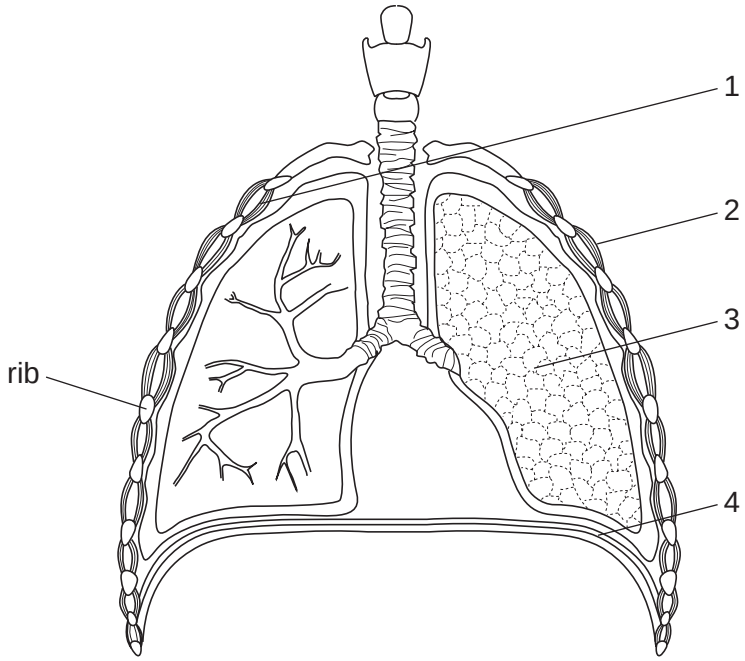
A carbon dioxide and nicotine

B carbon monoxide and nicotine

C carbon monoxide and tar

D nicotine and tar

17 The diagram shows a section through the thorax, showing the structures used when b

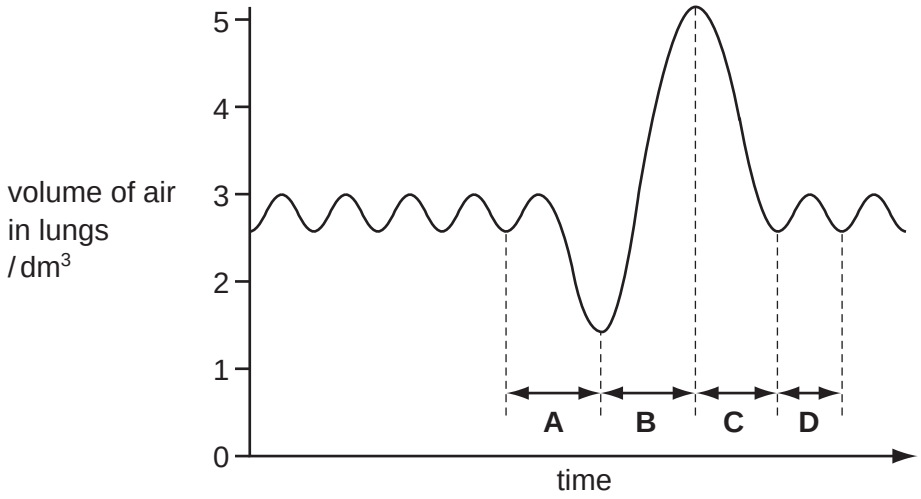


Which two structures contract when breathing in?

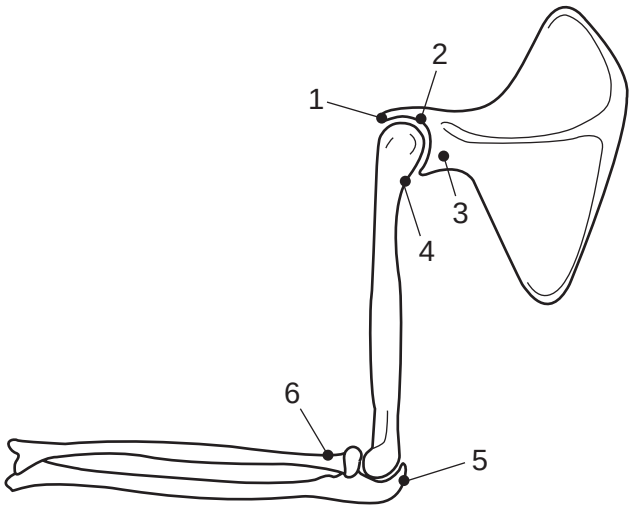
A 1 and 3 **B** 1 and 4 **C** 2 and 3 **D** 2 and 4

18 The graph shows the volume of air moving in and out of the lungs during breathing.

During which period would the rate of diffusion of carbon dioxide into the alveoli be fastest?



19 The diagram shows the bones of the lower and upper arm and the scapula. The num… the points of attachment of the tendons.

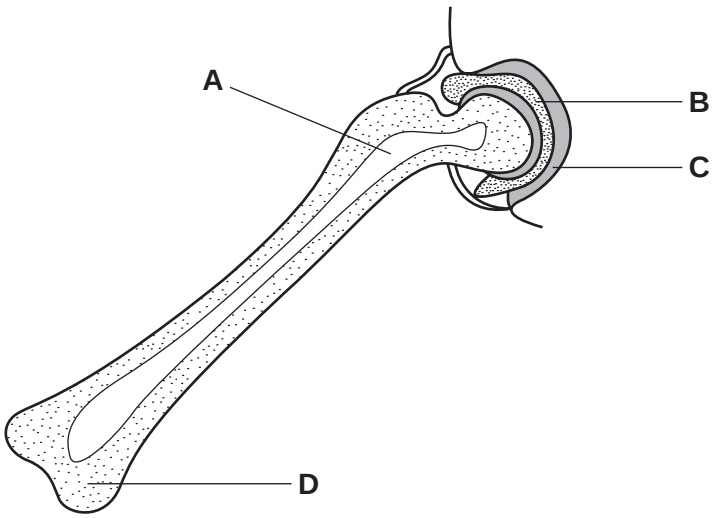


Which numbers indicate the points of attachment of tendons from a muscle that will relax when the arm is bent?

A 1 and 6 **B** 1, 4 and 5 **C** 3, 4 and 5 **D** 3, 4 and 6

20 The diagram shows parts of a bone and a joint.

If iron was lacking in the diet, which part would **not** function normally?



21 When would more ADH be released?

A during a prolonged bout of diarrhoea

B during a long period of cold weather

C following a meal containing large amounts of fibre

D following a very large drink of water

22 Which is part of a process of homeostasis?

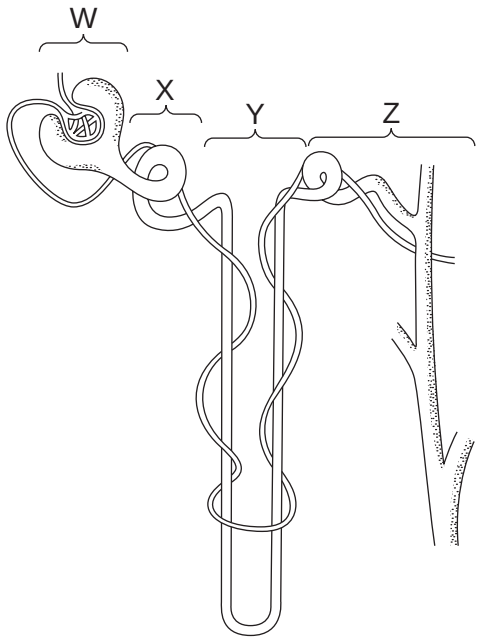
A contraction of circular muscles during peristalsis

B focusing of the eye on a distant object

C secretion of digestive enzymes

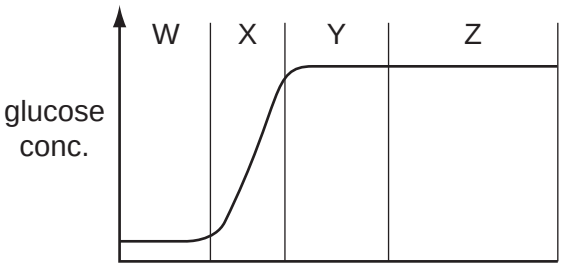
D vasoconstriction of arterioles in the skin

23 The diagram shows a kidney tubule (nephron) and associated blood vessels.

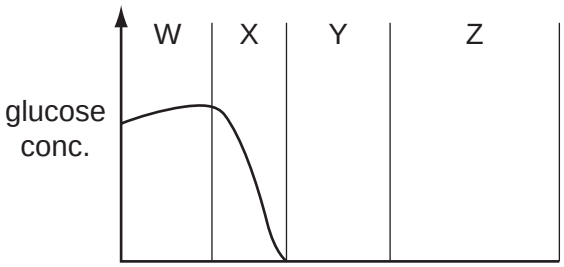


Which graph shows the concentration of glucose present in each part of the kidney tubule?

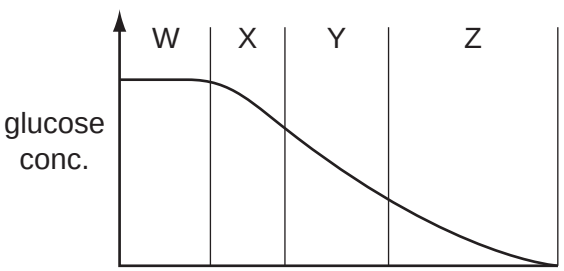
A



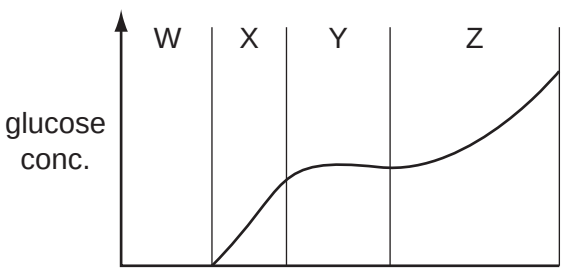
B



C



D



24 Which organ breaks down alcohol?

A colon

B kidney

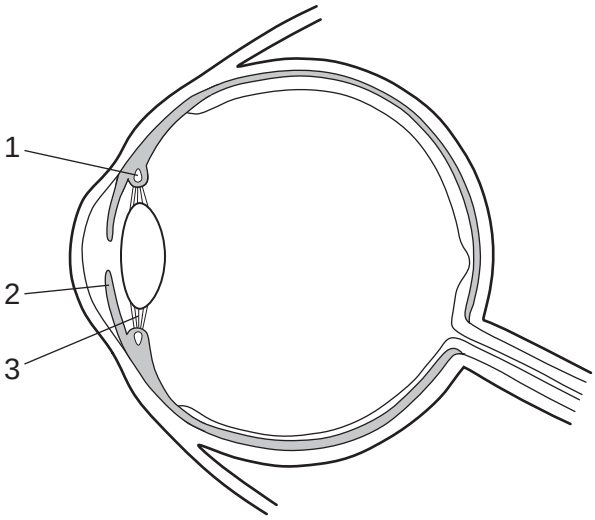
C liver

D pancreas

25 Which is a quick-acting hormone and which is a slow-acting hormone?

	quick	slow
A	glucagon	adrenaline
B	insulin	oestrogen
C	progesterone	oestrogen
D	testosterone	adrenaline

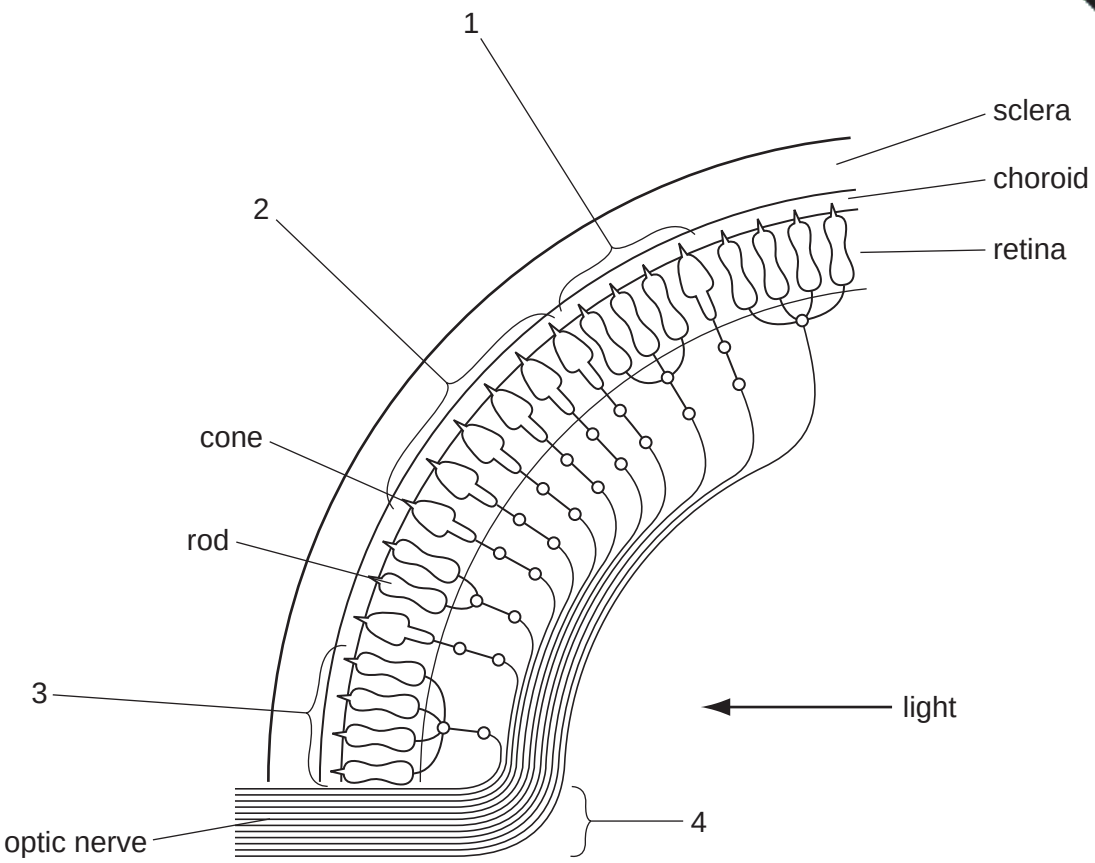
26 The diagram shows a horizontal section through the eye.



Which parts contain ligaments and muscles?

	ligaments	muscles
A	1	3
B	1	2
C	2	1
D	3	1

27 The diagram shows rods and cones in part of the eye.



Which part is the blind spot and which part is the yellow spot (fovea)?

	blind spot	yellow spot
A	1	2
B	3	4
C	4	2
D	4	3

28 Which defines good health?

A being in a state of mental and physical well being

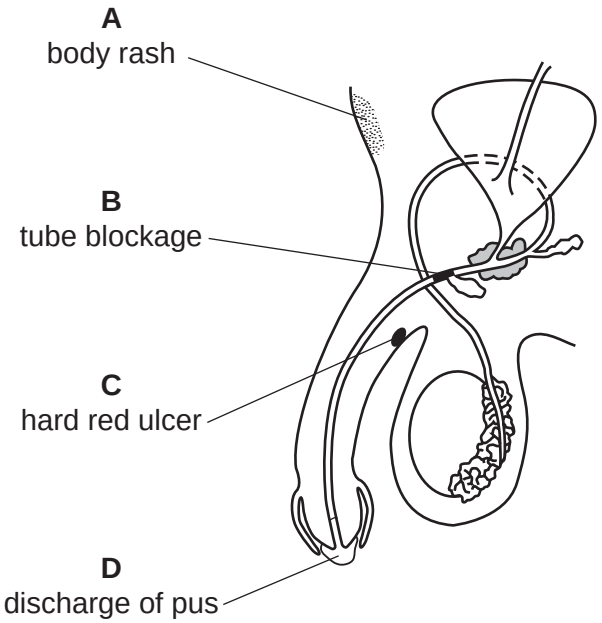
B having all parts of the body in good working order

C never having to take medicine, apart from pain killers occasionally

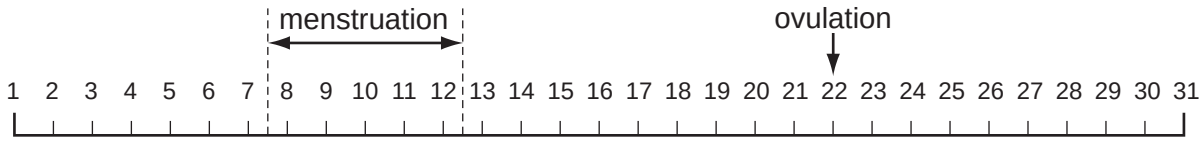
D never suffering from an infectious disease

29 The diagram shows the male reproductive organs.

Which sign of gonorrhoea is shown?



30 The diagram shows the dates of a menstrual cycle for a woman in a month.



Between which dates would she be **most** likely to become pregnant if sexual intercourse took place?

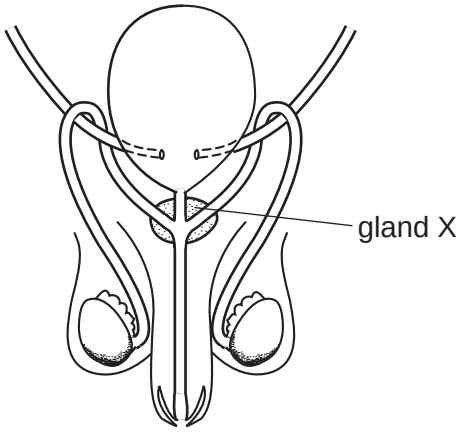
A 1st and 5th of the month

B 13th and 17th of the month

C 22nd and 24th of the month

D 27th and 31st of the month

31 The diagram shows the male urinary and reproductive systems.



In some older males gland X becomes swollen.

What is the result of this?

A a reduced sperm production

B a slower emptying of the bladder

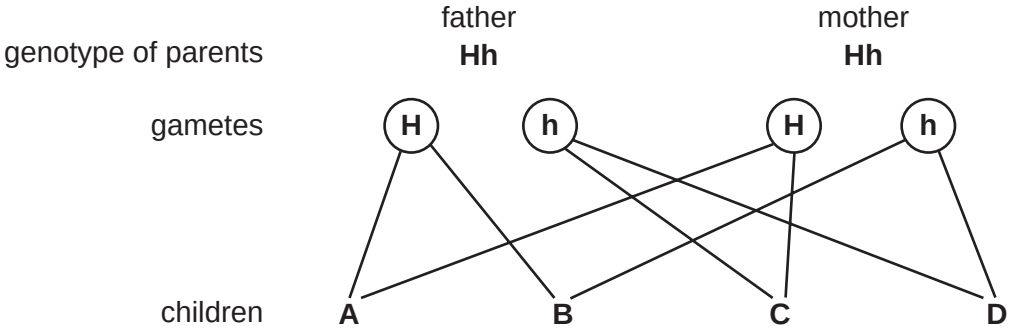
C an increased semen production

D the urine becomes more concentrated

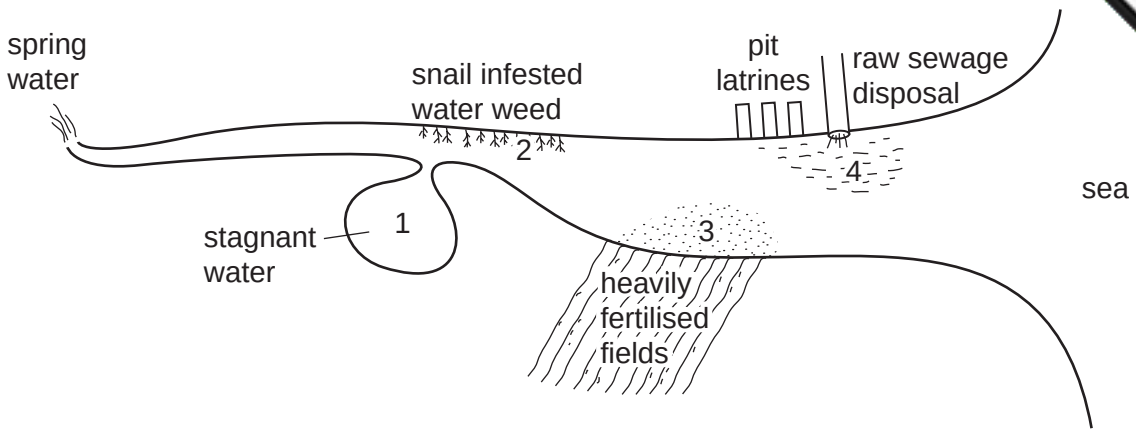
32 The diagram shows the inheritance of sickle cell anaemia in a family. The allele for normal haemoglobin is represented by **H** and the allele for defective haemoglobin by **h**.

A homozygous person carries a pair of identical alleles.

Which child is homozygous recessive?



33 The diagram shows a river from source to sea in which swimmers have contracted di



In which regions would infections of cholera, malaria and schistosomiasis be most likely?

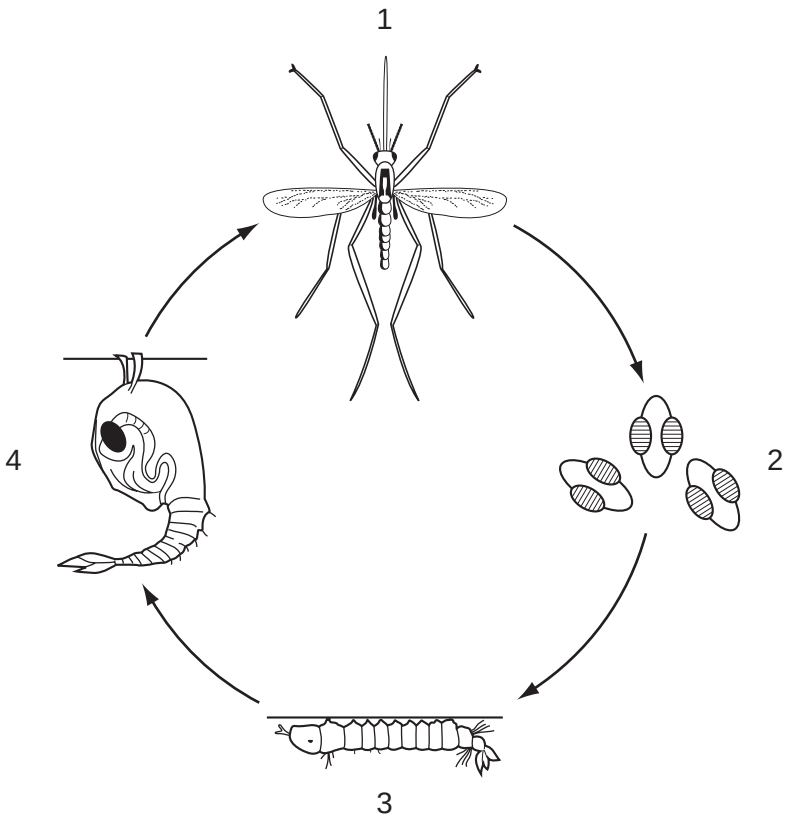
	cholera	malaria	schistosomiasis
A	1	3	4
B	3	2	1
C	4	1	2
D	4	3	2

34 The table shows information about the occurrence of diseases among students in four schools during one year.

In which school did students most likely live in overcrowded conditions?

	cholera	malaria	sickle cell anaemia	tuberculosis
A	1	8	1	3
B	2	3	1	9
C	5	15	8	5
D	9	1	0	3

35 The diagram shows the life cycle of a female mosquito.

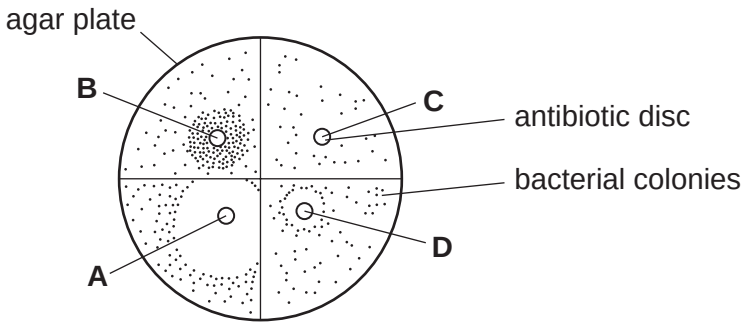


Which stages in the life cycle are able to feed?

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

36 Bacteria are grown on an agar plate. Four different antibiotic discs are placed on the plate as shown.

Which antibiotic would a doctor give to a patient suffering from an infection of these bacteria?



37 Houseflies are vectors of disease and their breeding must be controlled.

Which statements about houseflies are correct?

	houseflies are vectors of	adult females lay eggs in
A	malaria	refuse heaps
B	malaria	stagnant water
C	typhoid	refuse heaps
D	typhoid	stagnant water

38 One benefit of breast feeding is that a baby receives antibodies in the milk.

Which type of immunity is given to the baby?

A artificial active

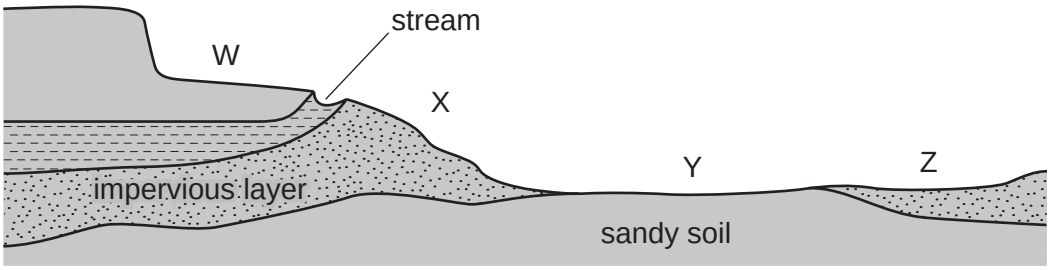
B artificial passive

C natural active

D natural passive

39 Locations for the amenities of a chemical plant, pit latrines, shallow wells and workers' houses have to be planned for a new village.

The diagram shows a section through the site with possible locations W, X, Y and Z.



What is the best location for these amenities on this site?

	chemical plant	pit latrines	shallow wells	workers' houses
A	W	X	Y	Z
B	X	W	Z	Y
C	Y	Z	X	W
D	Z	Y	W	X

40 What is the order of the stages for the large-scale treatment of water to produce drink

A river water → chlorination → filter → settlement tank → storage tank

B river water → coarse grid → settlement tank → filter → chlorination

C river water → settlement tank → coarse grid → filter → chlorination

D river water → settlement tank → filter → coarse grid → storage tank

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