

B G C S E

BIOLOGY

EXAMINATION PAPERS

UNDERSTAND • PRACTICE • SUCCEED





THE OPENHANDED CLASSROOM

LEARN MORE. ACHIEVE MORE. SMILE MORE.



BGCSE CLASSES

- ✓ Exam-Focused Learning
- ✓ Past Papers & Strategies
- ✓ Stronger Understanding
- ✓ Better Grades, Brighter Future



[**CLICK HERE**](#)



SAT CLASSES

- ✓ Smart Test Strategies
- ✓ Stronger Scores
- ✓ Time Management Skills
- ✓ College & Scholarship Ready



[**CLICK HERE**](#)



BJC CLASSES

- ✓ Clear, Simple Explanations
- ✓ Focus on Understanding
- ✓ Help That Fits Your Pace
- ✓ Build Confidence, Get Results



[**CLICK HERE**](#)



EXPERT TEACHING.
PROVEN RESULTS.



LEARN SMARTER.
ACHIEVE MORE.



FOCUSED SUPPORT.
REAL RESULTS.



THEOPENHANDEDCLASSROOM:
(242) 426-8891



THE OPENHANDED CLASSROOM

BGCSE FREE SOLUTIONS MANUALS

COMPLETE SOLUTIONS FOR ALL
MAJOR SUBJECTS

- ⦿ MATHEMATICS
- ⦿ ENGLISH LANGUAGE
- ⦿ HISTORY
- ⦿ RELIGIOUS STUDIES
- ⦿ ACCOUNTS
- ⦿ SCIENCES (BIOLOGY, PHYSICS,
COMBINED SCIENCE)
- ⦿ FOREIGN LANGUAGE
(FRENCH AND SPANISH)

UNDERSTAND. PRACTICE. SUCCEED.

CLICK HERE

EXAM-REAL.

EXAM-PROVEN.

FREE LISTENING COMPREHENSION — AUDIO FILES —



THE **EXACT AUDIO** USED
IN PAST BJC & BGCSE EXAMS



REAL EXAMS

The exact listening comprehension audio from past papers.



REAL PREPARATION

Hear what you'll hear in the real exam.



REAL RESULTS

Practise with purpose. Improve your confidence and performance.

AVAILABLE FOR:



BJC
ENGLISH



BGCSE
ENGLISH LANGUAGE



BJC
FRENCH



BJC
SPANISH



BGCSE
FRENCH



BGCSE
SPANISH

WHY THESE AUDIO FILES MATTER



EXACT AUDIO

The exact recordings used in past BJC & BGCSE exams.



EXAM FAMILIARITY

Get used to the real voices, speed, accents and exam conditions.



STRATEGIC ADVANTAGE

Walk in confident knowing exactly what to expect.



100% FREE

High quality. No cost. Just results.



CLICK HERE

DOWNLOAD • START PRACTISING



BETTER PREPARATION.
BETTER RESULTS.

You've got this!

PAST EXAMS. **REAL AUDIO**. BETTER PREP. GREATER CONFIDENCE.

3009/1

BGCSE

School Number	Candidate Number
Surname, Name and Initials	

BIOLOGY

PAPER 1 3009/1

Wednesday **17 MAY 2023** 9:00 A.M.–10:15 A.M.
(1hr.15mins.)

MINISTRY OF EDUCATION NATIONAL EXAMINATIONS

BAHAMAS GENERAL CERTIFICATE OF SECONDARY EDUCATION

INSTRUCTIONS AND INFORMATION FOR CANDIDATES

Do not open this booklet until you are told to do so.

Write your school number, candidate number, surname and initials in the spaces provided above.

There are fifty questions in this paper.

Answer **ALL** questions.

For each question, there are four possible answers labelled **A, B, C** and **D**.

Choose the **one** you consider correct and circle the **LETTER** of your choice in the booklet.

Calculators are permitted however **NO** graphing calculators are allowed.



This question paper consists of 21 printed pages and 3 blank pages.

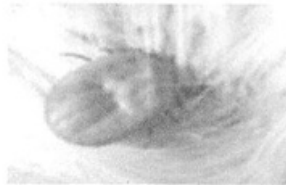
1. In the classification of living organisms, what is the meaning of the term binomial?
- A a system of giving every organism a single scientific name made up of two parts
 - B a system of giving every organism two scientific names
 - C a system of giving every organism a single common name made up of two parts
 - D a system of giving every organism two common names

2. The diagram below shows a fern plant.



Which term does **not** apply to this plant?

- A first trophic level
 - B herbivore
 - C producer
 - D photosynthetic organism
3. The picture shows a tick on a dog's skin. The tick is feeding on the blood of the dog.



Which term describes the tick in this feeding relationship?

- A detritivore
- B parasite
- C predator
- D saprophyte

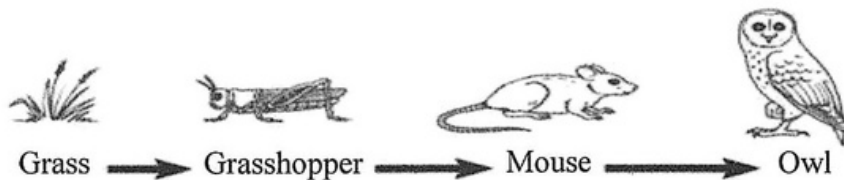


4. The diagram shows an ecosystem found in The Bahamas.



Which feature shown in this ecosystem acts as an abiotic factor?

- A angel fish
 - B brain coral
 - C sea urchin
 - D sea water
5. The sun provides 100% of the energy for the food chain. Which organism in this food chain is expected to receive approximately 0.1% of the energy?



- A grass
- B grasshopper
- C mouse
- D owl

6. What term is used to describe a collection of different species within an ecosystem?

- A community
- B niche
- C population
- D producer

7. What is **least** likely to be a result of deforestation?

- A an increase in biodiversity
- B an increase in soil erosion
- C an increase in the level of atmospheric carbon dioxide
- D greater risk of coastal flooding

8. A large quantity of non-selective herbicide is spread over a field that is next to a lake.

What is the effect of the herbicide on the weeds in the field and on the plants in the lake?

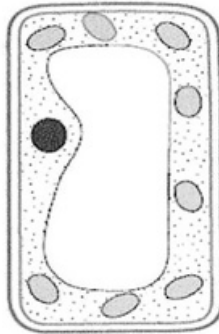
	weeds in the field	plants in the lake
A	less growth	more growth
B	less growth	less growth
C	more growth	less growth
D	more growth	more growth

9. Which row describes the function of some components in a root hair cell?

	cell wall	vacuole	nucleus
A	support	storage	regulation
B	energy release	reproduction	nutrition
C	support	energy release	storage
D	storage	support	energy release



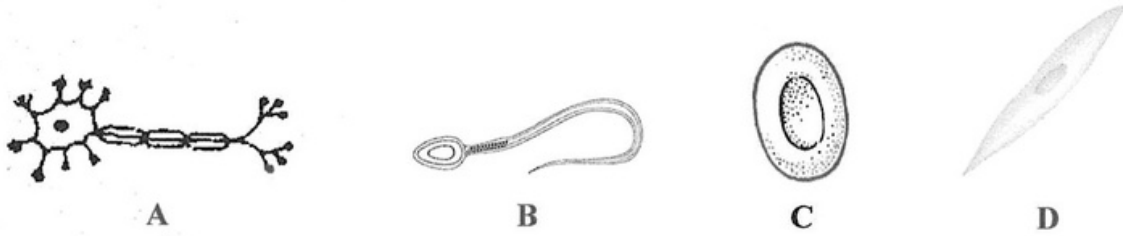
10. Which type of cell is shown in the diagram?



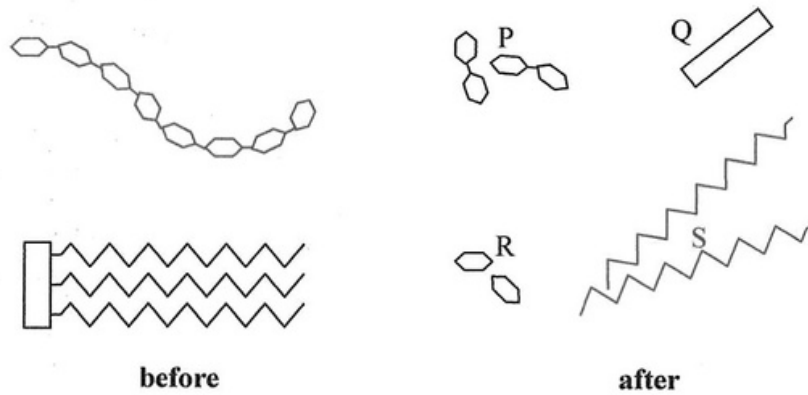
- A guard cell
 - B palisade cell
 - C root hair cell
 - D xylem cell
11. Which human cell does **not** have a nucleus?
- A muscle cell
 - B neurones
 - C red blood cell
 - D sperm cell
12. What describes a stem cell from an embryo?
- A can differentiate into only one type of cell
 - B can differentiate into any type of cell
 - C can only produce haploid cells
 - D can remain as a stem cell only



13. New cells are formed from existing cells by cell division. The diagram below shows four different cells. Which cell is formed by meiosis?



14. The diagram shows two food molecules before and after they have been digested.

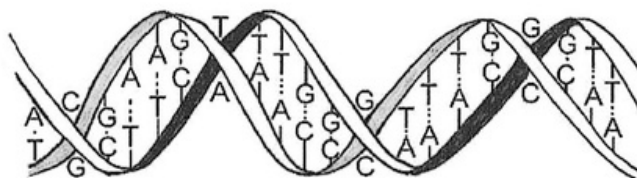


Which diagrams identify the possible products of digestion of the carbohydrate molecule?

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



15. What is the correct description of the diagram drawn below?



- A DNA single helix
- B RNA single helix
- C DNA double helix
- D RNA double helix
16. One example of genetically modified food is herbicide-resistant corn.
- What is inserted into the DNA of a corn plant cell to produce a genetically modified food (GMF) such as herbicide-resistant corn?
- A a gene from another species
- B a gene from the same species
- C chromosomes from another species
- D chromosomes from a different species
17. What will happen to a palisade cell when it is placed in distilled water and left for 3 hours?
- A It will decrease in size and become flaccid.
- B It will increase in size and become flaccid.
- C It will decrease in size and become turgid.
- D It will increase in size and become turgid.

18. A sample of milk was tested to prove it contains protein. Which row identifies the reagent used in the test and correctly states a positive test result?

	reagent	test result
A	Benedict's solution	blue
B	Benedict's solution	orange
C	biuret solution	blue
D	biuret solution	purple

19. Which term is used to describe substances that speed up the rates of chemical reactions in the body?

- A** carbohydrates
- B** enzymes
- C** hormones
- D** urea

20. Which structures, associated with the digestive system, produce the enzyme amylase in large quantities?

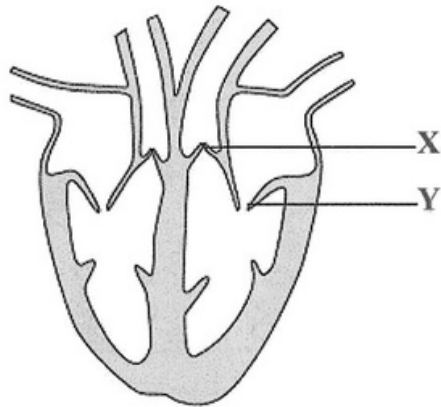
- A** gall bladder and pancreas
- B** liver and pancreas
- C** liver and salivary glands
- D** pancreas and salivary glands

21. Which statement about typical veins in the human body is **not** correct?

- A** they carry blood at low pressure
- B** they have valves
- C** they have a pulse
- D** they return blood to the heart



22. The diagram shows a vertical section through the human heart.



Which row correctly identifies structures **X** and **Y**?

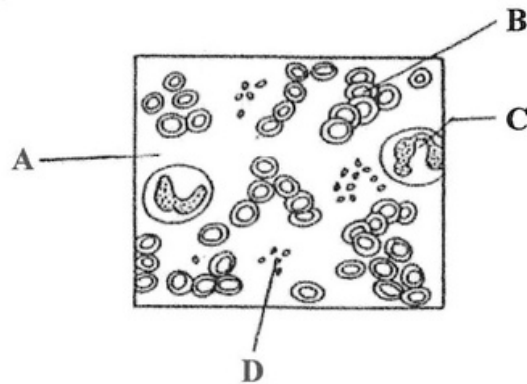
	X	Y
A	bicuspid (mitral) valve	semi lunar valve
B	semi lunar valve	bicuspid (mitral) valve
C	semi lunar valve	tricuspid valve
D	tricuspid valve	semi lunar valve

23. Which **three** risk factors for heart disease **cannot** be controlled?

- A** age, heredity, sex
- B** diet, sex, smoking
- C** sex, age, weight
- D** heredity, smoking, weight



24. The diagram represents different components found in the blood. Which component shown on the diagram is essential for the clotting of blood and has no other functions?



25. The diagram shows the measurement of the radial pulse in the lower arm.



If the measurement is 12 beats in 15 seconds, what is the number of beats per minute?

- A 24
- B 36
- C 48
- D 60



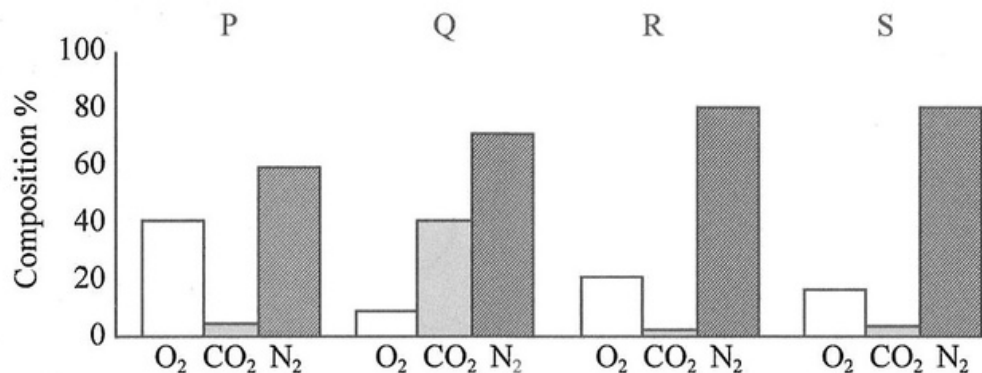
28. The diagram shows a cross-section through an alveolus and a capillary.



Why does oxygen move from P to Q?

- A oxygen in inspired air in the alveolus must replace carbon dioxide in the blood
- B the concentration of carbon dioxide is lower in the alveolus than the blood
- C the concentration of oxygen in the blood is lower than in the air in the capillary
- D the concentration of oxygen in the blood is lower than in the air in the alveolus

29. The graph shows the composition of four samples of air.



Key: O₂ = oxygen, CO₂ = carbon dioxide, N₂ = nitrogen

Which sample is inspired air and which sample is expired air?

	inspired air	expired air
A	R	S
B	P	R
C	Q	P
D	S	R

30. Which waste product is excreted from the kidneys and also excreted from the lungs?

30. Which waste product is excreted from the kidneys and also excreted from the lungs?

- A carbon dioxide
- B salt
- C urea
- D water

31. An athlete takes part in a marathon race on a hot sunny day.

What would be the effect on the athlete who took part in the race?

	volume of water reabsorbed in the kidney	volume of water lost from the skin	effects on hairs on the skin
A	less	decreases	lie flat
B	more	decreases	erect
C	less	increases	lie flat
D	more	increases	lie flat

32. What is the dark pigmented layer of the eye called?

- A choroid
- B cornea
- C retina
- D sclera

33. If a bright light is shone suddenly into the front of the eye, which changes occur?

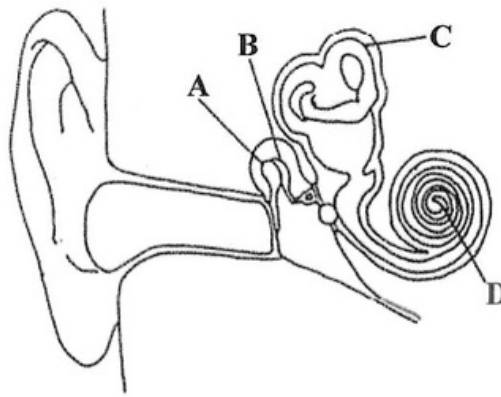
- A iris becomes wider and pupil dilates
- B iris becomes wider and pupil constricts
- C iris becomes narrower and pupil dilates
- D iris becomes narrower and pupil constricts



34. Which statement describes the role of tendons?

- A they attach ligaments to bones
- B they attach muscles to bones
- C they attach muscles to cartilage
- D they attach muscles to muscles

35. The diagram shows a section of the ear. Which labelled structure contains receptors for the detection of sound waves?

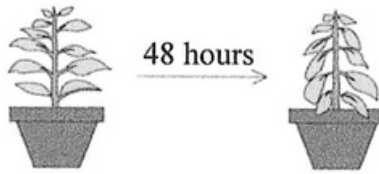


36. Which hormone increases the rate at which glycogen is broken down into glucose in the liver?

- A glucagon
- B insulin
- C oestrogen
- D testosterone



37. The diagram shows a potted plant and the same plant 48 hours later.

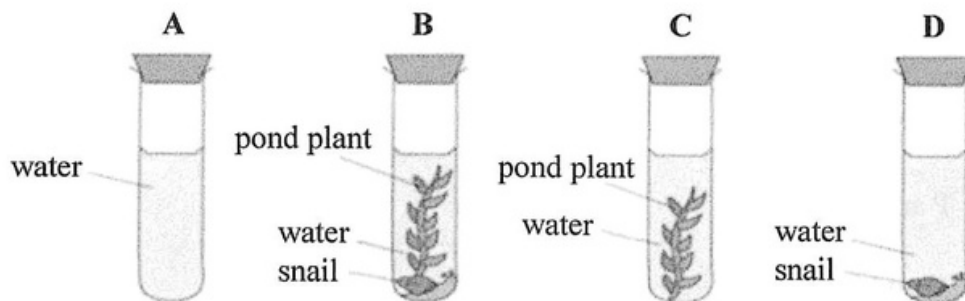


What has caused the appearance of the plant to change?

- A water loss from the plant by translocation
 - B water loss from the roots by osmosis
 - C water loss from the leaves by transpiration
 - D water loss from the soil by evaporation
38. An experiment was set up with four test-tubes as shown in the diagram below.

All four test-tubes were left in sunlight for 6 hours.

Which test-tube would contain the **least** amount of dissolved carbon dioxide after 6 hours?

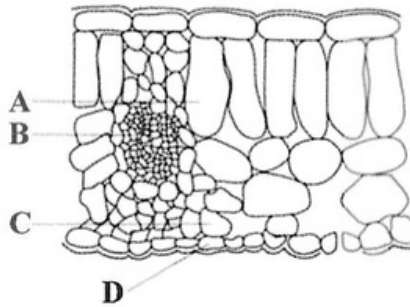


39. Which row in the table shows the role of phloem and xylem in transport in plants?

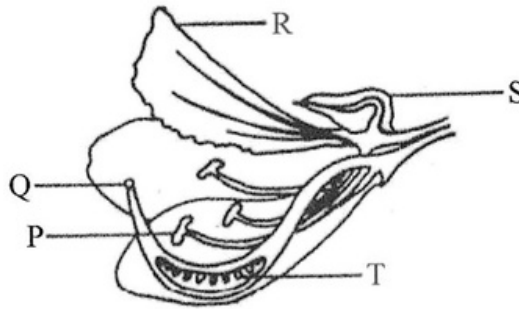
	phloem transport	xylem transport
A	starch in solution	water only
B	sugars in solution	water and mineral ions
C	water and mineral ions	starch solution
D	water only	sugars in solution

40. The diagram shows a section through a leaf.

Which cell type would have the highest concentration of oxygen on a bright sunny day?



41. The diagram represents a flower.

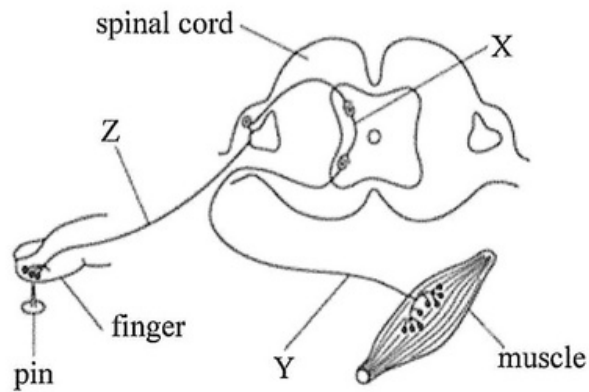


In which two structures does meiosis occur?

- A P and Q
- B P and T
- C Q and R
- D Q and S



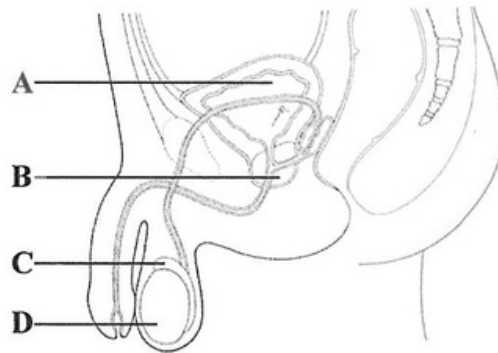
42. The diagram shows a simple reflex arc.



Which sequence correctly shows the order in which an impulse passes during a reflex action?

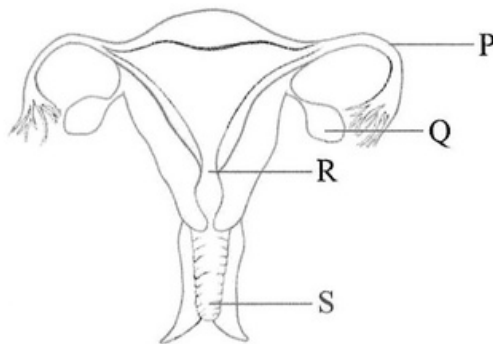
	first → last
A	X → Y → Z
B	Y → X → Z
C	Y → Z → X
D	Z → X → Y

43. The diagram shows the male reproductive system. In which structure are sperm cells stored?



The diagram shows the female reproductive system.

Use the diagram to answer questions 44 and 45.



44. In which labelled structure are gametes made?

- A P
- B Q
- C R
- D S

45. Which shows the correct pathway of sperms through the female reproductive system?

- A $S \rightarrow P \rightarrow Q$
- B $S \rightarrow R \rightarrow Q$
- C $S \rightarrow R \rightarrow P$
- D $R \rightarrow P \rightarrow Q$



46. Albinism is a condition in which the pigment melanin is not produced in the skin, hair and eyes. This is an inherited condition caused by a recessive allele.

If both parents have albinism, what is the probability that their first child will also have albinism?

- A 0%
- B 25%
- C 75%
- D 100%

47. A patient with a bacterial infection is treated with antibiotics. However, some of the bacteria survive.

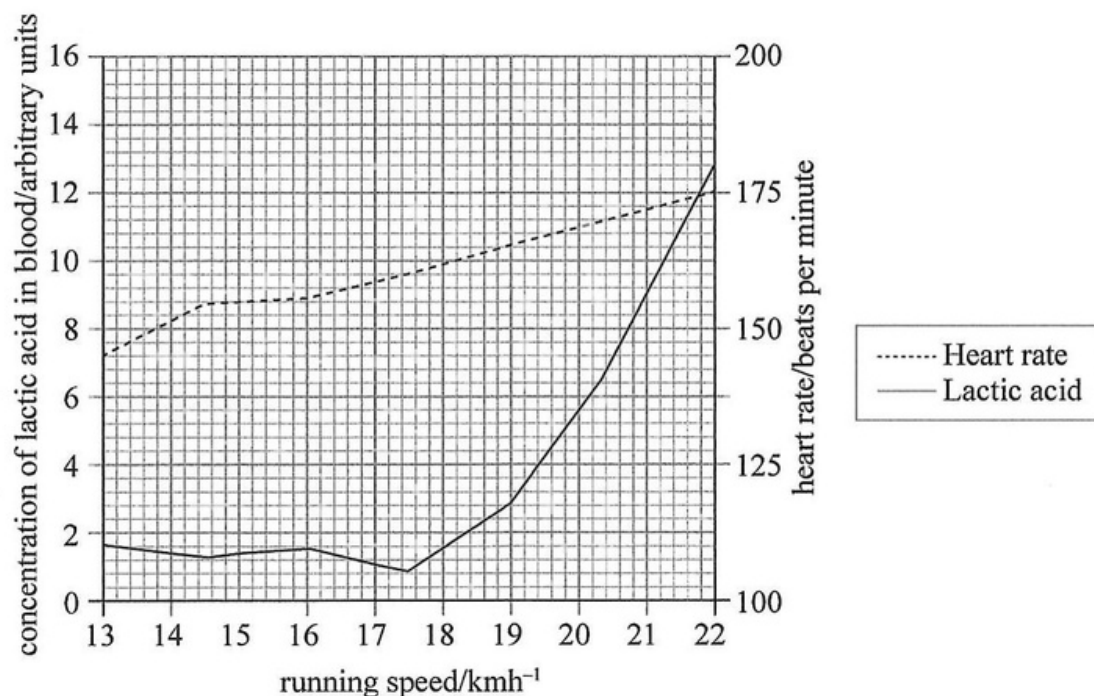
Which statement is correct about the bacteria that have survived?

- A The bacteria will now all be resistant to all antibiotics.
- B The resistant bacteria are a result of artificial selection.
- C The bacteria will have undergone a process of natural selection.
- D The antibiotic will now work better on the next generation of bacteria.

48. The table shows examples of continuous and discontinuous variation. Which correctly identifies examples of each type of variation?

	continuous variation	discontinuous variation
A	blood type	body mass
B	eye colour	height
C	milk yield	gender
D	tongue rolling	intelligence

The graph shows the heart rate of a person while running and the concentration of lactic acid in the blood. Use the graph to help answer questions 49 and 50.



49. What is the concentration of lactic acid in the blood, in arbitrary units, when the heart rate is at its maximum?

- A 100
- B 125
- C 175
- D 180



50. Which statement is a correct interpretation of the graph?
- A Above a running speed of 175 kmh^{-1} , the concentration of lactic acid increases as running speed increases.
 - B Below a running speed of 175 kmh^{-1} , the concentration of lactic acid increases as running speed increases.
 - C An increase in the heart rate causes an increase in the concentration of lactic acid in the blood.
 - D An increase in the heart rate causes a decrease in the concentration of lactic acid in the blood.

BLANK PAGE

