

NAMIBIA SENIOR SECONDARY CERTIFICATE

BIOLOGY ORDINARY LEVEL

6116/1

PAPER 1 Multiple Choice

45 minutes

Marks 40

2022

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

INSTRUCTIONS AND INFORMATION TO CANDIDATES

- Write in soft pencil.
- Answer **all** questions.
- Make sure that you receive the multiple choice answer sheet with your **Candidate Number** on it.
- There are **forty** questions on this paper.
- 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.
- If you want to change an answer, thoroughly erase the one you wish to delete.

Read the instructions on the answer sheet carefully.

- Each correct answer will score one mark.
- All questions in this paper carry equal marks.
- Any rough working should be done in this booklet.
- You may use a non-programmable calculator.

This document consists of **11** printed pages and **1** blank page.



Republic of Namibia

MINISTRY OF EDUCATION, ARTS AND CULTURE

- 1 The table shows different age groups of grade 11 learners in the class.

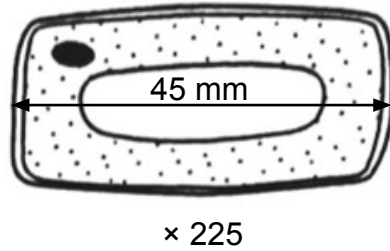
age group	number of learners
15 -16	3
17 -18	19
19 -20	17
21 -22	0

What would be the appropriate method of presenting this information?

- A bar graph
 - B histogram
 - C line graph
 - D pie chart
- 2 Which is the unit for volume?
- A cm
 - B cm³
 - C kg
 - D km²
- 3 Why do some biologists consider viruses as living organisms?
- A They can feed.
 - B They can grow.
 - C They can reproduce.
 - D They can respire.
- 4 Which row describes the features of arachnids?

	number of legs	number body divisions	antennae present
A	4	2	yes
B	6	3	no
C	8	2	yes
D	10	3	no

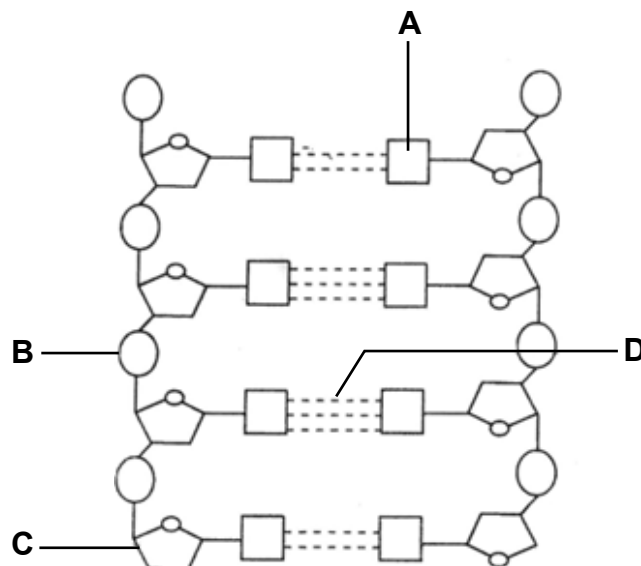
- 5 The diagram shows a magnified plant cell. The length of the magnified cell is 45 mm.



What is the actual length of the cell in micrometres?

- A 0.2 μm
 B 2.0 μm
 C 20 μm
 D 200 μm
- 6 Which cell component releases energy?
 A mitochondrion
 B ribosome
 C rough endoplasmic reticulum
 D vesicle
- 7 Which phrase can be applied to osmosis?
 A movement of particles and ions from high concentration to low concentration
 B movement of particles and ions from low concentration to high concentration
 C movement of water molecules from high water potential to low water potential
 D movement of water molecules from low water potential to high water potential
- 8 The diagram shows a DNA molecule.

Which letter shows a base?

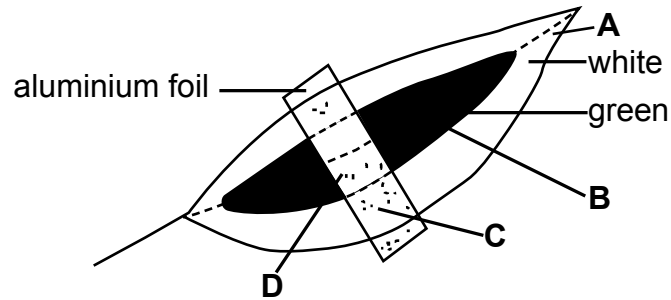


9 Which reagent is used to test for proteins?

- A Benedict's solution
- B biuret solution
- C DCPIP solution
- D iodine solution

10 The diagram shows a variegated leaf which was treated as shown and left in the sunlight for 12 hours.

Which part would show a positive result for starch?



11 Which environmental factor can be increased in a greenhouse by burning fuels?

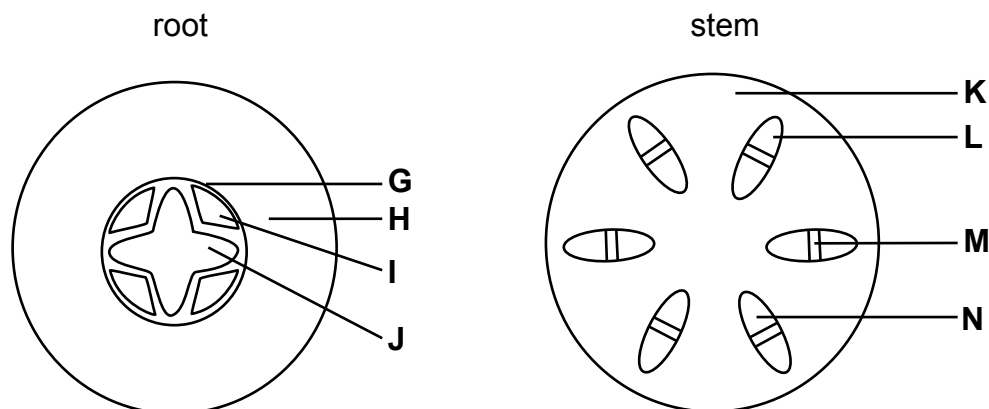
- A carbon dioxide concentration
- B light intensity
- C smoke
- D oxygen concentration

12 Which body secretion neutralises acids and emulsifies fats in the alimentary canal?

- A bile
- B gastric juice
- C pancreatic juice
- D adrenaline

- 13 The diagram shows cross-sections through a root and a stem of a dicotyledonous plant.

Which letters label the xylem?



- A G and K B I and L C J and M D J and N
- 14 Which method of treating coronary heart disease avoids surgery?
- A angioplasty
B aspirin
C by-pass
D stents
- 15 Which row shows blood components correctly linked to their functions?

	platelets	red blood cells	white blood cells
A	blood clotting	defence against pathogens	transport of oxygen
B	blood clotting	transport of oxygen	defence against pathogens
C	defence against pathogens	blood clotting	transport of oxygen
D	defence against pathogens	transport of oxygen	blood clotting

- 16 Which defence mechanism of the human body is an example of a mechanical barrier?
- A antibodies
B hydrochloric acid
C lymphocytes
D skin

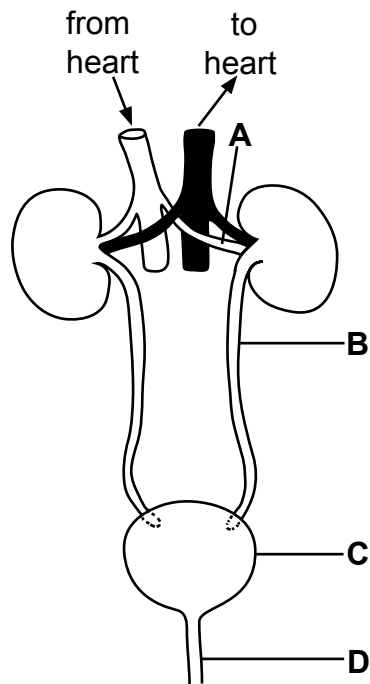
17 Which substance can be used to complete the word equation for aerobic respiration?

glucose + oxygen \longrightarrow + water

- A carbon dioxide
- B carbohydrates
- C ethanol
- D lactic acid

18 The diagram shows the urinary system.

Which letter indicates the urethra?



19 Which substance transported by the blood should **not** be present in dialysis fluid?

- A amino acid
- B glucose
- C urea
- D water

20 What effects does auxin have on the shaded parts of the plants?

- A causes cells to bend
- B causes cells to divide
- C causes cells to elongate
- D causes cells to shrink

21 Which is true for reflex actions?

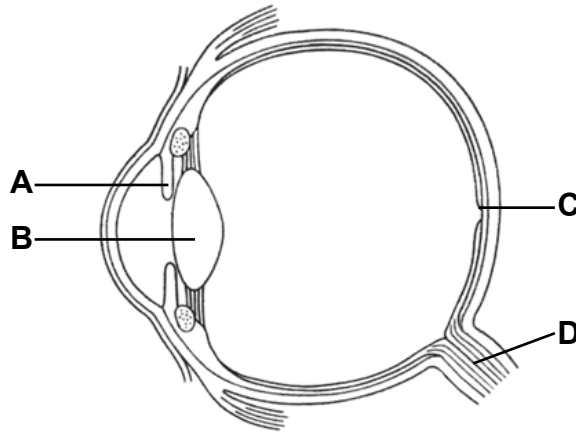
- A response is controlled by hormones
- B response is fast
- C response is initiated under the control of the brain
- D nerve impulse takes a longer path

22 Which part of the eye controls the amount of light entering the eye?

- A cornea
- B blind spot
- C iris
- D retina

23 The diagram shows a human eye.

In which part are the cone cells situated?

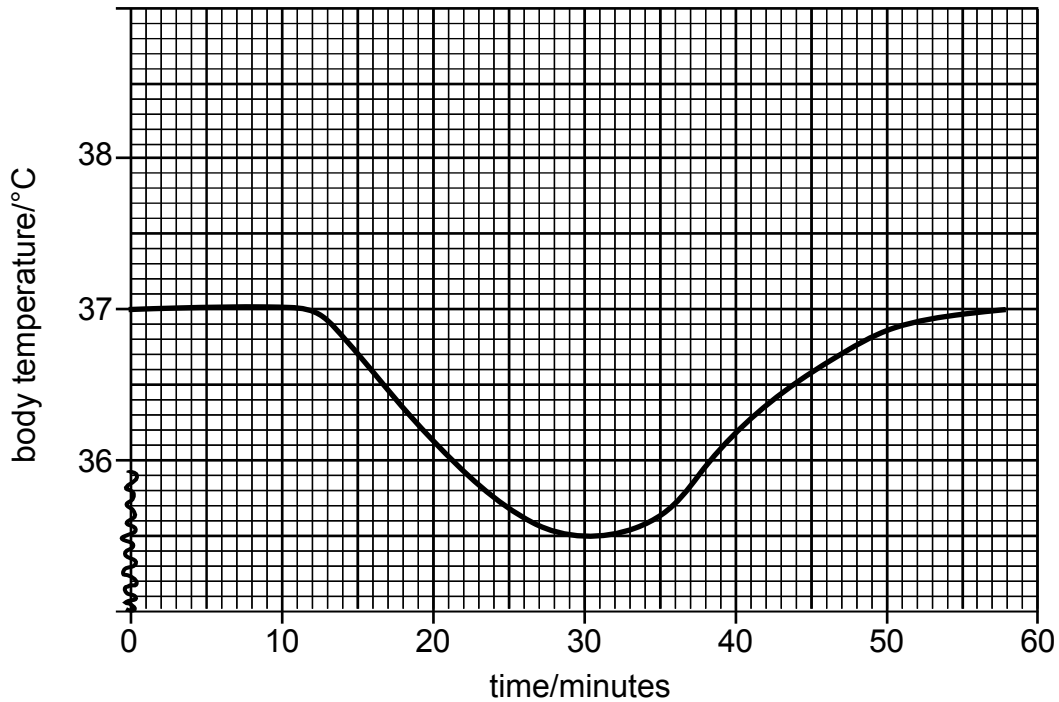


24 Which sequence is correct for a negative feedback mechanism?

- A control centre \Rightarrow receptor \Rightarrow corrective action \Rightarrow feedback to receptor \Rightarrow effector
- B control centre \Rightarrow effector \Rightarrow corrective action \Rightarrow feedback to receptor \Rightarrow receptor
- C receptor \Rightarrow control centre \Rightarrow corrective action \Rightarrow effector \Rightarrow feedback to receptor
- D receptor \Rightarrow control centre \Rightarrow effector \Rightarrow corrective action \Rightarrow feedback to receptor

- 25 The graph shows the body temperature of a person before, during and after a cold bath.

At what time did the person stop bathing?



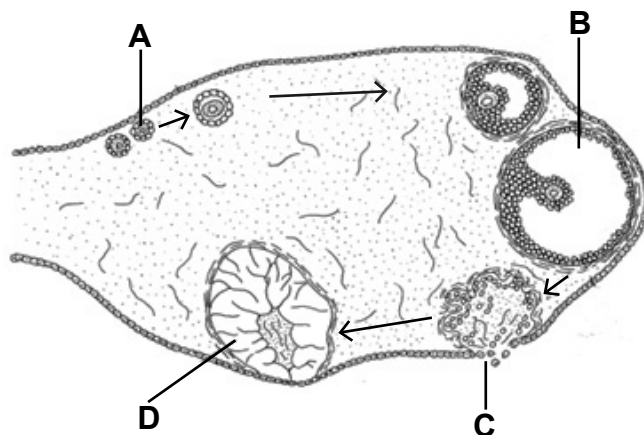
- A 12 minutes B 20 minutes C 30 minutes D 55 minutes
- 26 Which row describes the responses of different parts of the skin to cold weather?

	arterioles	sweat production
A	constrict	more sweat produced
B	constrict	less sweat produced
C	dilate	more sweat produced
D	dilate	less sweat produced

- 27 Which row describes a sperm cell and the process producing it?

	chromosome content of sperm cell	process
A	diploid	meiosis
B	diploid	mitosis
C	haploid	meiosis
D	haploid	mitosis

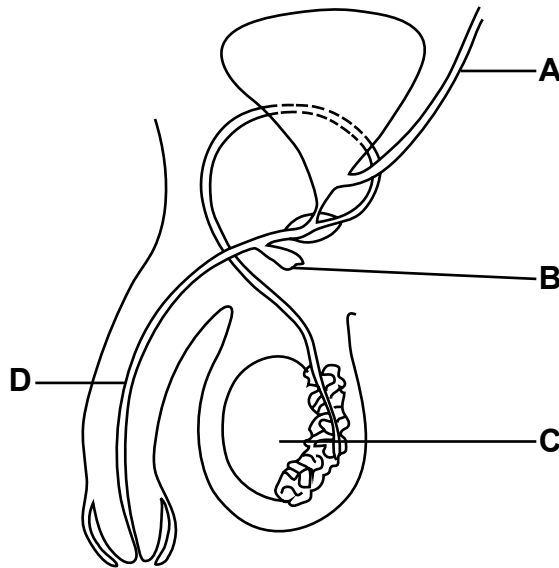
- 28 Which flower feature would be present in a wind-pollinated flower?
- A colourful petals
 - B large, feather-like anthers
 - C heavy pollen grains
 - D smooth stigma
- 29 Which sequence describes the transfer of a male gamete to the ovule in a plant?
- A germination of pollen grain → growth of pollen tube → fusion of gametes
 - B germination of pollen grain → fusion of gametes → growth of pollen tube
 - C growth of pollen tube → germination of pollen grain → fusion of gametes
 - D fusion of gametes → germination of pollen grain → growth of pollen tube
- 30 The diagram shows the sequence of changes in structures within a human ovary.
Which structure produces progesterone?



- 31 Which hormone triggers ovulation?
- A FSH
 - B LH
 - C oestrogen
 - D progesterone

32 The diagram shows the human male reproductive system.

Where are sperm cells produced?



33 Which birth control method prevents ovulation?

- A condom
- B contraceptive pill
- C spermicidal cream
- D tubal ligation

34 Why are people who have contracted HIV/AIDS more likely to be vulnerable to other illnesses?

- A AIDS is an STD
- B AIDS is not curable
- C HIV is a virus
- D HIV weakens the immune system

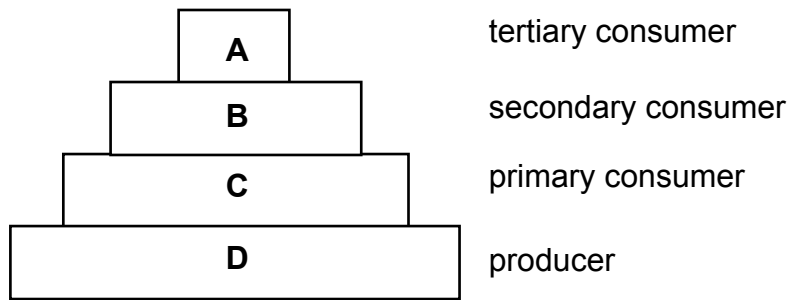
35 A couple have three children, all are males. They are expecting a fourth child.

What is the probability of the fourth child being male?

- A 25%
- B 50%
- C 75%
- D 100%

36 The diagram shows a pyramid of numbers.

Which is the second trophic level?



37 Which phase of a population growth curve indicates a rapid increase in numbers as the result of food becoming readily available?

- A death
- B lag
- C log
- D stationary

38 Which factor contributes to famine in Namibia?

- A distribution of drought relief food
- B drought and flood
- C average rainfall
- D reduced population growth

39 How does eutrophication cause the death of aquatic organisms?

- A accumulation of carbon dioxide in the water
- B accumulation of oxygen in the water
- C lack of carbon dioxide in the water
- D lack of oxygen in the water

40 Which term can be defined as the maintenance of the environment and natural resources in a state that maintains biodiversity?

- A conservation
- B deforestation
- C ecosystem destruction
- D sustainable development

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