

NAMIBIA SENIOR SECONDARY CERTIFICATE

BIOLOGY ORDINARY LEVEL

4322/1

PAPER 1 Multiple Choice

1 hour

Marks 40

2018

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.

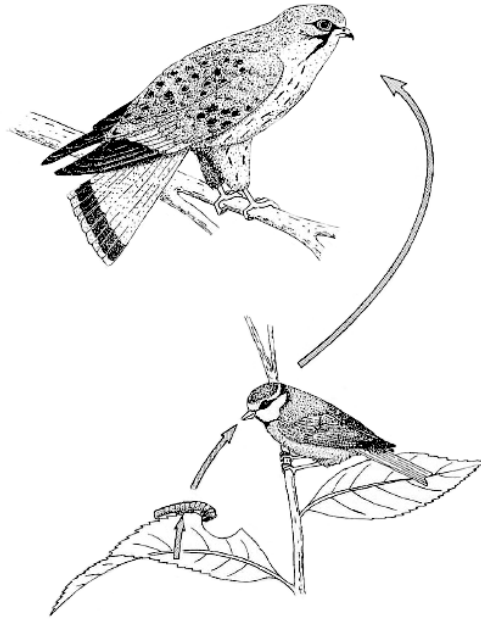
This document consists of **9** printed pages and **3** blank pages.



Republic of Namibia

MINISTRY OF EDUCATION, ARTS AND CULTURE

- 1 The diagram shows a simple food chain.



Which characteristic of life is shown?

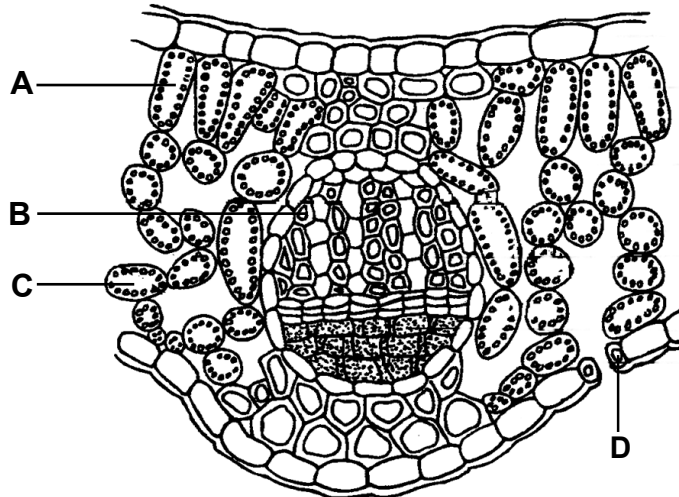
- A excretion
 - B growth
 - C nutrition
 - D respiration
- 2 A unicellular (single celled) organism containing chloroplasts is isolated.
- Which kingdom does this organism belong to?
- A animalia
 - B fungi
 - C plants
 - D protocists
- 3 Which of the following pairs of features are used to classify myriapods?

	feature 1	feature 2
A	one pair of antennae	three body sections
B	one pair of antennae	two body sections
C	two pairs of antennae	three body sections
D	two pairs of antennae	two body sections

- 4 Xylem vessels have lignified walls for the purpose of
- A absorption.
 - B conduction.
 - C support.
 - D transport.

- 5 Why is the heart regarded as an organ?
- A It has different cells working together.
 - B It has similar cells working together.
 - C It has different tissues working together.
 - D It has similar tissues working together.
- 6 The uptake of ions in solution by root hairs involves
- A assimilation.
 - B active transport.
 - C diffusion.
 - D osmosis.
- 7 What term is used to describe organisms that produce their own food?
- A autotrophic
 - B geotropic
 - C heterotrophic
 - D phototropic
- 8 In which area of the alimentary canal does most absorption of digested food occur?
- A colon
 - B ileum
 - C oesophagus
 - D stomach
- 9 In a food test the reagent DCPIP was used.
This was to test for the presence of
- A amino acid.
 - B ascorbic acid.
 - C fatty acid.
 - D lactic acid.

10 The diagram shows different cell types in a leaf.



In which cell will photosynthesis **not** take place?

11 Which row correctly matches the mineral ion to its function?

	mineral ion	function
A	magnesium	cell wall synthesis
B	magnesium	protein synthesis
C	nitrate	cell wall synthesis
D	nitrate	protein synthesis

12 Which two factors increase the rate of photosynthesis?

- A decreased carbon dioxide and light
- B increased carbon dioxide and humidity
- C optimum temperature and light
- D optimum temperature and humidity

13 Clear nail varnish is painted onto the surface of a leaf and left to dry.

When the dry nail varnish is peeled off, which part of the leaf will be imprinted onto it?

- A epidermis cells
- B palisade cells
- C phloem
- D xylem

14 When testing a leaf for starch, the leaf is placed in hot ethanol.

What is the purpose of this?

- A to kill pathogens on the leaf
- B to remove chlorophyll from the leaf
- C to soften the leaf
- D to stop enzyme activity in the leaf

15 A person with poor night vision is likely to have a deficiency of

- A iodine.
- B iron.
- C vitamin A.
- D vitamin C.

16 The table shows examples of the uses of microorganisms in the food industry.

Which food product is correctly matched to the microorganisms used in its production?

	food product	bacteria used	fungi used
A	beer	✓	✗
B	bread	✓	✓
C	single-cell protein	✓	✓
D	yoghurt	✗	✓

17 Which problem contributes to famine?

- A decrease in population
- B drought
- C equal distribution of food
- D fertile soil

18 Below is a list of processes that occur in the alimentary canal.

Which sequence is correct?

- A absorption → ingestion → egestion → digestion
- B digestion → egestion → ingestion → absorption
- C egestion → absorption → digestion → ingestion
- D ingestion → digestion → absorption → egestion

19 Which muscles are used in peristalsis?

- A circular and longitudinal muscles
- B circular and radial muscles
- C radial and ciliary muscles
- D radial and longitudinal muscles

20 Which blood vessel transports absorbed food directly from the small intestine to the liver?

- A hepatic artery
- B hepatic portal vein
- C hepatic vein
- D vena cava

- 21** Xerophytes are adapted to reduce transpiration by having leaves that
- A** are covered in hairs.
 - B** have a larger surface area.
 - C** have a thin, waxy cuticle.
 - D** have many stomata.
- 22** When systemic pesticides are sprayed onto plants, they are transported around the plant.

Which vessels are they transported in and by which process?

	vessel	process
A	phloem	translocation
B	phloem	transpiration
C	xylem	translocation
D	xylem	transpiration

- 23** A possible cause of a heart attack could be a blockage in the
- A** coronary artery.
 - B** coronary vein.
 - C** pulmonary artery.
 - D** pulmonary vein.
- 24** Which cell type produces antibodies?
- A** lymphocyte
 - B** phagocyte
 - C** platelet
 - D** red blood cell
- 25** Which of the following can provide a person with artificial immunity?
- A** coming into contact with an infected person
 - B** drinking breast milk
 - C** having a vaccination
 - D** sharing needles
- 26** What is the correct test for carbon dioxide?
- A** a glowing splint dies out
 - B** a glowing splint ignites
 - C** a popping sound with a lit splint
 - D** clear lime water turns milky

- 27 How can carbon monoxide affect the human respiratory system?
- A It can cause chronic bronchitis.
 - B It can cause haemoglobin to carry less oxygen.
 - C It can cause lung cancer.
 - D It can cause the breakdown of alveoli.
- 28 The removal of metabolic waste from the body is known as the process of
- A defecation.
 - B egestion.
 - C elimination.
 - D excretion.
- 29 Insulin lowers the blood glucose concentration.
From which organ is it released?
- A brain
 - B liver
 - C lungs
 - D pancreas
- 30 Which two structures make up the central nervous system?
- A brain and cerebellum
 - B brain and spinal cord
 - C cerebrum and peripheral nervous system
 - D sensory and motor neurones
- 31 Which type of neuron does the diagram show?



- A connector
- B motor
- C relay
- D sensory

- 32** Which of the following is an example of accommodation in the eye?
- A** A change in the shape of the lens depending on light intensity.
 - B** A change in the shape of the lens depending on the distance of the object.
 - C** A change in the size of the pupil depending on light intensity.
 - D** A change in the size of the pupil depending on the distance of the object.
- 33** Which process helps to maintain a constant body temperature when it is hot?
- A** shivering
 - B** sweating less
 - C** vasoconstriction
 - D** vasodilation
- 34** Which of these are produced by meiosis?
- A** gametes
 - B** seeds
 - C** spores
 - D** tubers
- 35** What is the function of oestrogen?
- A** to break down the lining of the uterus
 - B** to further thicken the lining of the uterus
 - C** to maintain the lining of the uterus
 - D** to repair the lining of the uterus
- 36** What happens to the cervix and the uterus during birth?

	cervix	uterus
A	constricts	wall contracts
B	constricts	lining contracts
C	dilates	wall contracts
D	dilates	lining contracts

- 37** When can a 3:1 ratio in the offspring's phenotype be expected?
- A** When both parents are heterozygous.
 - B** When both parents are homozygous dominant.
 - C** When one parent is homozygous dominant and the other parent is heterozygous.
 - D** When one parent is homozygous recessive and the other parent is heterozygous.
- 38** In blood groups, both the I^A and the I^B alleles affect the phenotype.
What is this an example of?
- A** co-dominance
 - B** complete dominance
 - C** incomplete dominance
 - D** natural selection

39 Which of the following does **not** directly use sunlight as its source of energy?

- A** aquatic plant
- B** cactus
- C** flowering plant
- D** fungus

40 The following events occur during eutrophication.

- 1 aquatic algae grow fast
- 2 bacteria use up oxygen
- 3 excess nitrates and phosphates discharged into river
- 4 dead algae decomposed by bacteria
- 5 fish die due to lack of oxygen

Which sequence shows the correct order of these events?

- A** 3 → 1 → 4 → 2 → 5
- B** 3 → 4 → 1 → 5 → 2
- C** 5 → 2 → 3 → 1 → 4
- D** 5 → 3 → 2 → 4 → 1

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