



ZIMBABWE SCHOOL EXAMINATIONS COUNCIL

General Certificate of Education Ordinary Level

BIOLOGY

PAPER 1 Multiple Choice

4025/1

1 hour

JUNE 2024 SESSION

Additional materials:

Multiple Choice answer sheet

Soft clean eraser

Soft pencil (type B or HB is recommended)

INSTRUCTIONS TO CANDIDATES

Answer **all** questions. For each question there are **four** possible answers **A, B, C** and **D**, choose the correct answer. Record your choice in soft pencil on the separate answer sheet provided.

Read carefully the instructions on the answer sheet.

INFORMATION FOR CANDIDATES

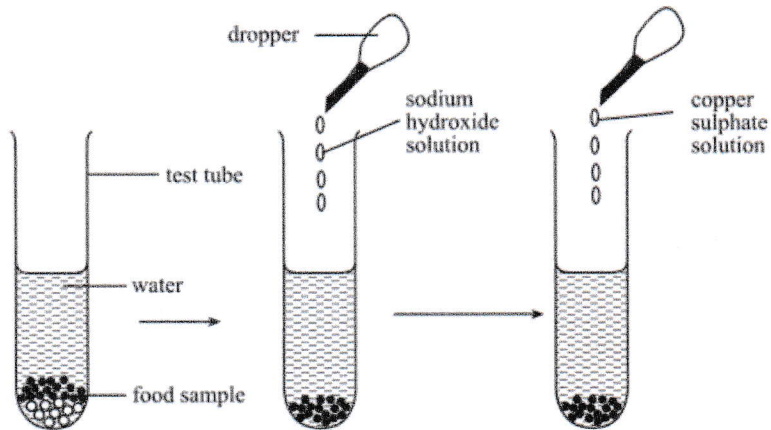
There are **forty** questions in this paper. Each correct answer will score **one** mark. Any rough working should be done on this question paper.

This question paper consists of 17 printed pages and 3 blank pages.

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1. Which branch of Biology uses biological processes, organisms or systems to make products that improve lives of people?
- A anatomy
 - B biotechnology
 - C cytology
 - D physiology
2. If the flame jumps out too high, when lighting a Bunsen burner,
- A shout to alert the others.
 - ✗ B turn off the gas tap.
 - C close the air holes.
 - D blow out the flame.
3. Polysaccharides are a class of
- A lipids.
 - B proteins.
 - ✗ C carbohydrates.
 - D nucleic acids.

4. The diagram shows stages in an experiment to test for a food nutrient.



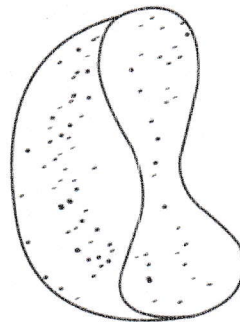
The test is for

- A glucose.
 - B protein.
 - C starch.
 - D fat.
5. A cell is the
- A smallest part of an organism.
 - B basic functional unit of life.
 - C site of biochemical reactions.
 - D active part of an organism.

6. What is true about the nucleus of a plant cell?

- A It contains DNA.
- B It is a site of respiration.
- C It contains cell sap.
- D It is a site of photosynthesis.

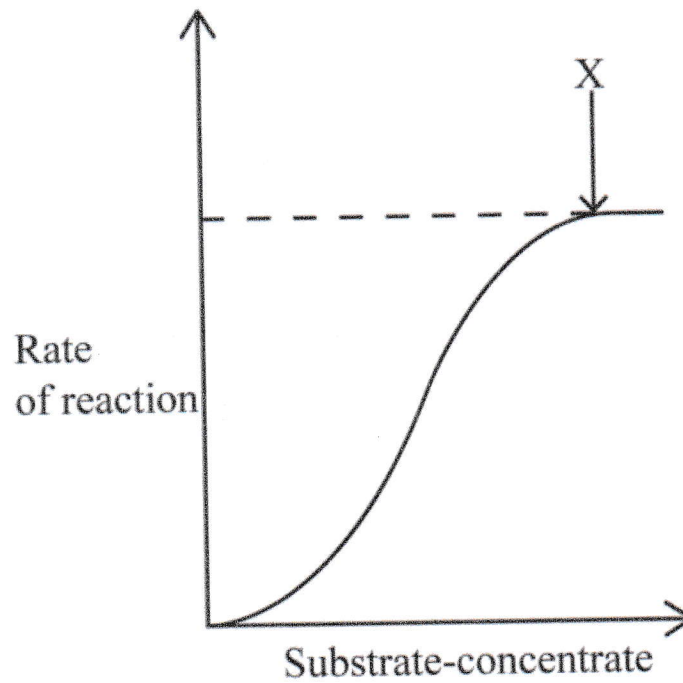
7. The diagram shows a specialized cell



The cell is specialised for

- A producing antibodies.
 - B ingesting pathogens.
 - C transporting oxygen.
 - D transmitting impulses.
8. A detergent which contains enzymes will work best in water at
- A any temperature.
 - B cold temperature.
 - C hot temperature.
 - D warm temperature.

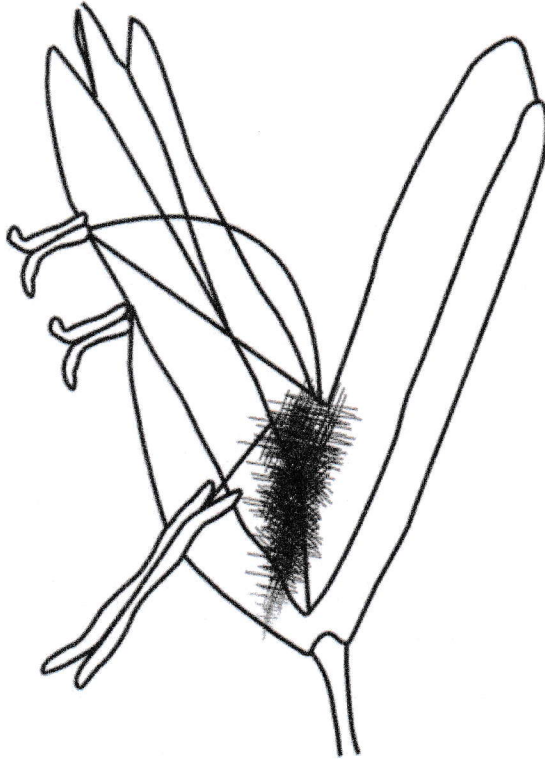
9. The graph shows the effect of substrate concentration on the rate of an enzyme-controlled reaction.



- At point X, the active sites are
- A unoccupied.
 - B saturated.
 - C destroyed.
 - D denatured.
10. Which property of enzymes makes them specific?
- A sensitive to pH
 - B posses active sites
 - C affected by temperature
 - D they are protein in nature

11. An example of a micronutrient in plant nutrition is
- A nitrogen.
 - B phosphorus.
 - C magnesium.
 - D potassium.
12. Which hormone is essential for cell multiplication in plants?
- A ethylene
 - B gibberellin
 - C auxin
 - D cytokinin
13. Some plants, grown in a greenhouse, are supplied with all nutrients required for growth. The temperature is maintained at optimum and the supply of water is adequate. The plants have short roots and stems. To promote shoot and root elongation in the plants, they can be sprayed with
- A ethylene.
 - B gibberellins.
 - C auxins.
 - D cytokinins.

14. The diagram shows a flower.



It is wind pollinated because it has

- A spiky pollen.
 - B large petals.
 - C sticky stigma.
 - D exposed anthers.
15. When investigating conditions necessary for germination, pyrogalic acid is used to exclude
- A moisture.
 - B warmth.
 - C oxygen.
 - D carbon dioxide.

16. The table shows the end products of digestion of starch, proteins and lipids.

Which row, **A**, **B**, **C** or **D**, is correct?

	starch	proteins	lipids
A	amino acids	glucose	fatty acids
B	fatty acids	glucose	amino acids
C	amino acids	fatty acids	glucose
D	glucose	amino acids	fatty acids

17. The table shows the carbon dioxide percentage composition of inhaled and exhaled air. Which row, **A**, **B**, **C** or **D**, shows the correct percentage in inhaled air and exhaled air?

	inhaled air (%)	exhaled air (%)
A	79	79
B	20	16
C	0.03	4
D	0.01	6

18. Breathing rate increases during physical activity to

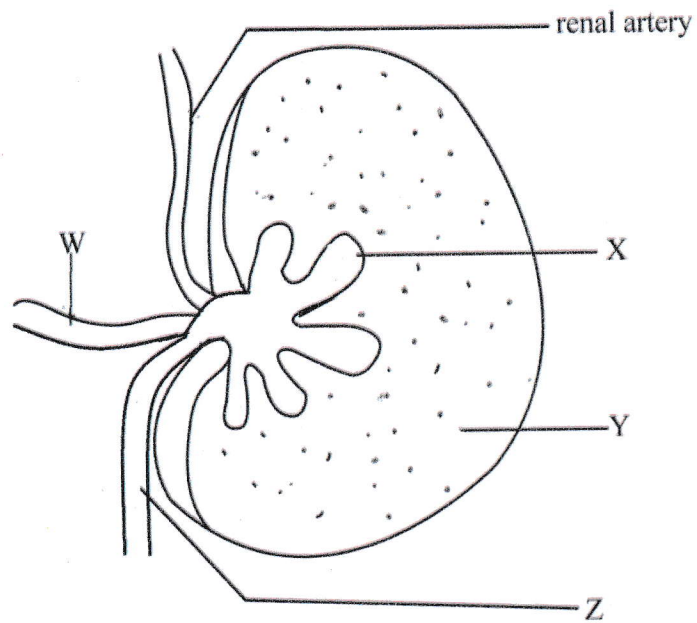
- A** remove lactic acid from blood.
- B** supply more oxygen to the blood.
- C** supply more glucose to active tissues.
- D** remove carbon dioxide from the tissues.

19. Which specialised cells are affected by HIV?

- A** thrombocytes
- B** erythrocytes
- C** lymphocytes
- D** phagocytes

20. Which animal parasite damages the liver?
- A bacteria
 - B fluke
 - C tick
 - D virus
21. Which method of contraception is used by males **only**?
- A loop
 - B vasectomy
 - C diaphragm
 - D tubal ligation ✕

22. The diagram shows the cross section of a kidney.

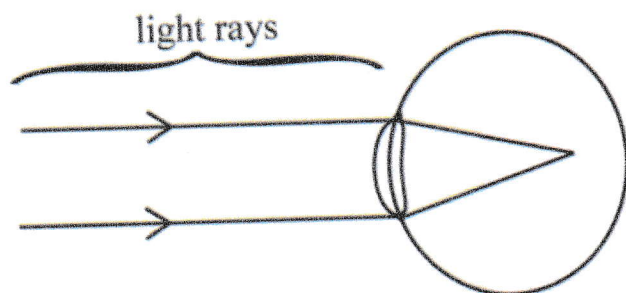


Which part, W, X, Y or Z has the least concentration of urea?

- A W
 B X
 C Y
 D Z
23. Which response will increase body temperature?
- A vasodilation
 B vasoconstriction
 C shivering
 D sweating

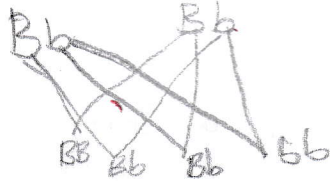
Kidney

24. The diagram shows an eyesight defect which needs to be corrected.



The defect can be corrected by use of

- A concave lens.
 - B convex lens.
 - C bifocal lens.
 - D multifocal lens.
25. Which one is a ball and socket joint?
- A ankle
 - B elbow
 - C knee
 - D shoulder
26. In a bread mould, which statement describes rhizoids?
- A hyphae that grow vertically upwards
 - B structures that germinate into new hyphae
 - C hyphae that grow horizontally on the substrate
 - D hyphae that penetrate into the substrate

27. The growth of bacteria is **not** affected by
- A temperature.
 - B light.
 - C substrate.
 - D pH.
28. An allele is
- A a unit of inheritance.
 - B expressed only when heterozygous.
 - C the alternative form of a gene.
 - D the observable appearance of an organism.
29. The gene for eye colour has two alleles, an allele for blue eyes (**b**) and an allele brown eyes (**B**). The allele for blue eyes is recessive to that for brown eyes. A blue eyed mother has children, half are blue eyed and half are brown eyed. What is the genotype and phenotype of the biological father?
- 
- A **BB** and brown
 - B **Bb** and brown
 - C **Bb** and blue
 - D **bb** and blue
30. A normal carrier male had a child with a female with albinism. What is the probability of them having a normal child?
- A 0
 - B 0.25
 - C 0.50
 - D 0.75

31. Which characteristic shows discontinuous variation?

- A complexion
- B mass
- C leaf length
- D ear shape \

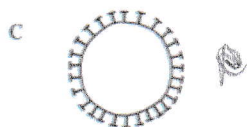
32. The discovery of antibiotics has made it possible to cure infections caused by bacteria. Some bacteria are now resistant to antibiotics.

This is as a result of

- A artificial selection.
- B natural selection.
- C recombinant DNA technology.
- D inbreeding by the bacteria.

33. The diagram shows different microorganisms.

Which organism **A**, **B**, **C** or **D** belongs to the same family as the 2019 Novel Corona Virus?



34. The steps numbered 1 to 5 show the sequence of events for a process, **X**.

1. nitrates and phosphates from raw sewage and fertilisers washed into water bodies
2. algae absorb nutrients and grow
3. algae form a blanket on water surface blocking out the sun
4. algae die
5. bacteria decompose dead algae using oxygen for respiration

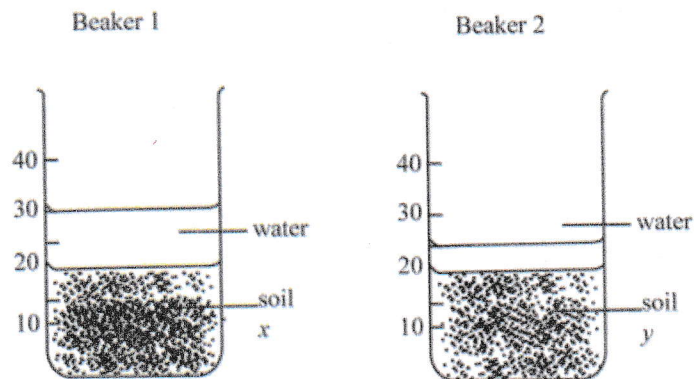
Process **X** is

- A photosynthesis.
 B eutrophication.
 C decomposition.
 D fossilisation.

35. Leaching of soil is the loss of

- A water.
- B microorganisms.
- C nutrients. ~~A~~
- D humus.

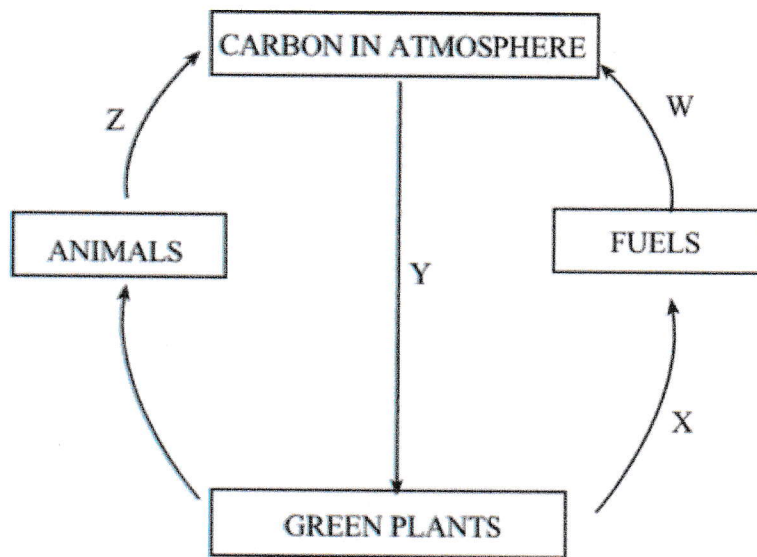
36. 20 cm^3 of soil x was put in beaker 1 and 20 cm^3 of soil y was put in beaker 2. 20 cm^3 of water was added to each beaker and the resultant volumes are as shown in the diagrams.



The difference in the final volume is caused by larger

- A soil particles in soil x .
- B air spaces in soil x . ~~A~~
- C soil particles in soil y .
- D air spaces in soil y .

37. The diagram shows the carbon cycle.



Arrow X represents

- A photosynthesis.
 - B combustion.
 - C fossilisation.
 - D respiration.
38. Which disease is caused by *Protozoa*?
- A cholera
 - B HIV
 - C TB
 - D malaria
39. Which drugs are suitable for an H.I.V patient?
- A antibiotics
 - B anti retrovirals
 - C analgesics
 - D prophylactics

40. Sexually transmitted infections are best prevented by
- A abstaining from sexual intercourse. ✕
 - B proper use of condoms.
 - C being faithful to one uninfected partner.
 - D regular testing and screening.