ZIMBABWE SCHOOL EXAMINATIONS COUNCIL

General Certificate of Education Ordinary Level

BIOLOGY

PAPER 1 Multiple Choice

4025/1

JUNE 2019 SESSION

1 hour

Additional materials:
- Multiple Choice answer sheet
- Soft clean eraser
- Soft pencil (type B or HB is recommended)
- Mathematical tables/ Electronic calculator (optional)

TIME 1 hour

INSTRUCTIONS TO CANDIDATES

Do not open this booklet until you are told to do so.
Write your name, Centre number and candidate number on the answer sheet in the spaces provided unless this has already been done for you.

There are **forty** questions in 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 very carefully the instructions on the answer sheet.

INFORMATION FOR CANDIDATES

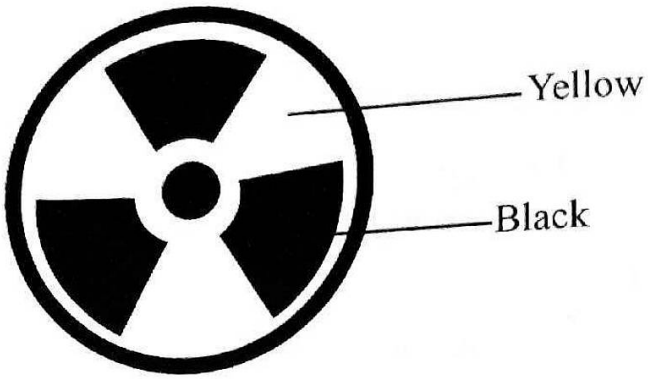
Each correct answer will score **one** mark. A mark will **not** be deducted for a wrong answer. Any rough working should be done in this booklet.

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[Turn over

1 The diagram shows a safety symbol used in a science laboratory.



The symbol is a warning against

A fires.

B smoke.

C radiation.

D fans.

2 Which branch of Biology involves the study of cells?

A botany

B anatomy

C ecology

D cytology

3 Which carbohydrate is a polysaccharide?

A glucose

B maltose

C starch

D sucrose

4 In photosynthesis, water is used as a

A coolant.

B catalyst.

C solvent.

D reagent.

5 The organelle that contributes to the osmotic properties of a plant cell is the

A cell wall.

B chloroplast.

C cytoplasm.

D vacuole.

6 Which feature of a red blood cell increases its surface area?

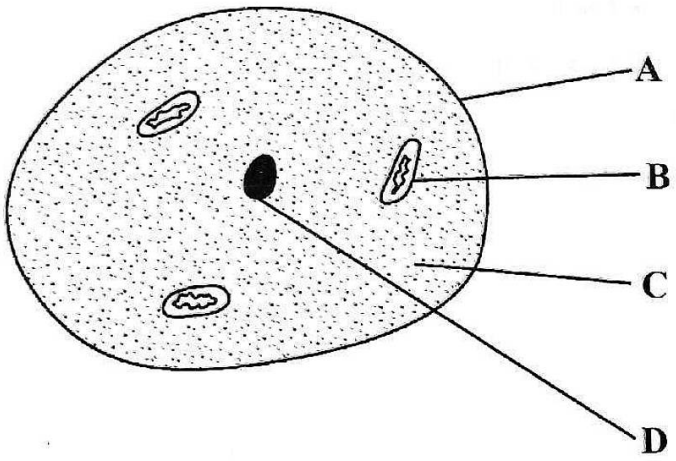
A presence of haemoglobin

B absence of a nucleus

C thin membrane

D thin cross section

7 The diagram shows an animal cell.
In which part, **A**, **B**, **C** or **D**, does aerobic respiration take place?



8 Which statement about enzymes is **not** true?

A they are biological catalysts

B they are used up during catalysis

C they are substrate specific

D they are protein in nature

9 Enzyme activity

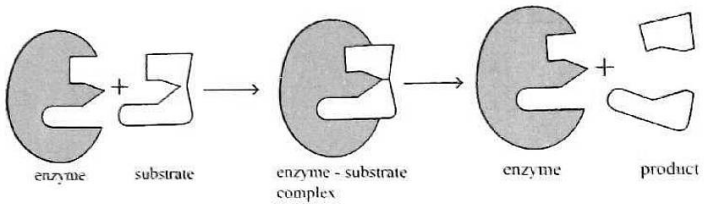
A increases with increase in pH then remains constant

B decreases with increase in pH then remains constant.

C increases with increase in pH then decreases.

D decreases with increase in pH then increases.

10 The diagram illustrates a mode of action of enzymes.



This mode of action is called

A activation and binding.

B activation and breakdown.

C lock and catalysis.

D lock and key.

11 Which factor is **not** necessary for the germination of seeds?

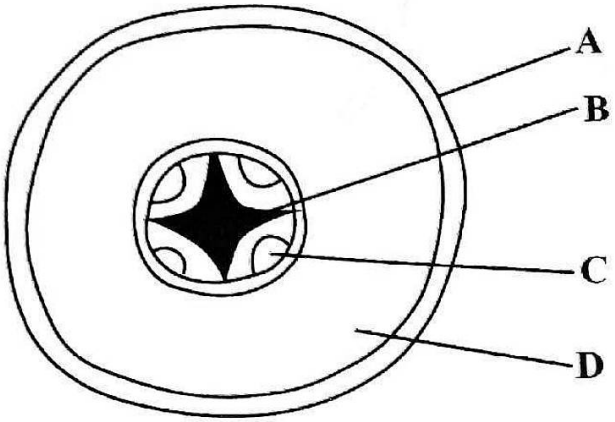
A light

B warmth

C oxygen

D moisture

12 The diagram shows a cross section of a dicotyledonous root.
Which part, **A**, **B**, **C** or **D**, is responsible for transporting organic molecules?



13 Which condition results in rapid transpiration?

A low humidity

B low light intensity

C low temperature

D low wind speed

14 Which one is an advantage of sexual reproduction?

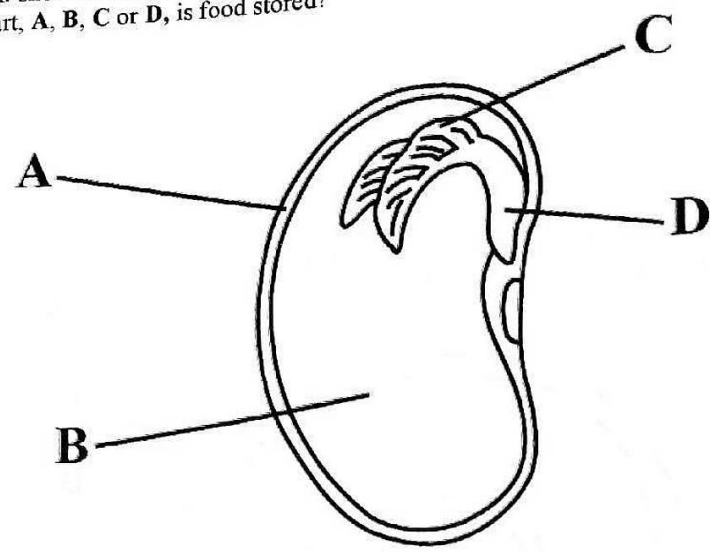
A increase in genetic variation

B maintenance of desirable characteristics

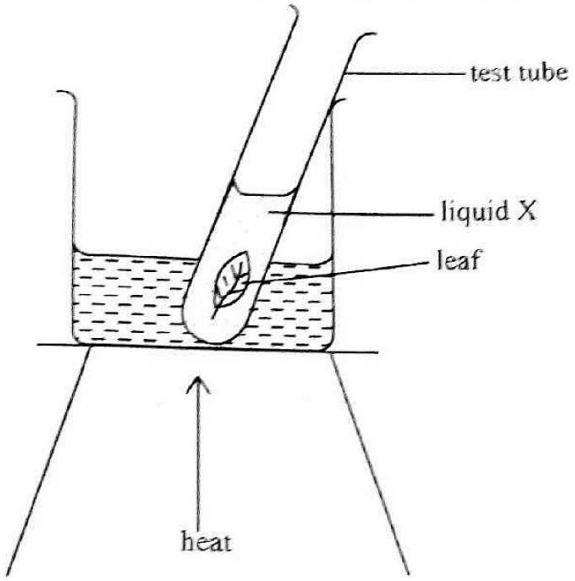
C intense colonisation of an area

D reduction in competition with other species

15 The diagram shows a bean seed cut in half.
In which part, **A**, **B**, **C** or **D**, is food stored?



16 The diagram shows one of the steps in testing a leaf for starch.



What is liquid **X**?

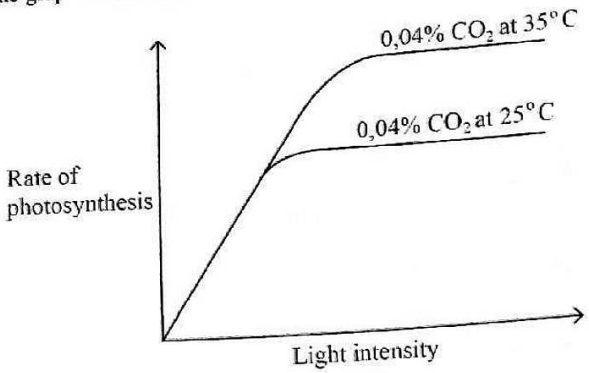
A water

B limewater

C alcohol

D iodine solution

17 The graph shows results of an investigation on factors affecting the rate of photosynthesis.



Which factor is limiting the rate of photosynthesis when the curves are flat?

A carbon dioxide

B temperature

C light

D water

18 A long term effect on smoking on the respiratory system is

A constriction of bronchioles.

B destruction of alveoli.

C increased mucus production.

D paralysis of cilia.

19 Memory, intelligence and consciousness in the brain is controlled by the

A cerebellum.

B cerebrum.

C hypothalamus.

D medulla oblangata.

20 Shortage of vitamin A in the diet leads to

A bleeding under the skin.

B formation of soft bones.

C poor healing of wounds.

D reduced resistance to disease.

21 Which type of immunity will be acquired through vaccination?

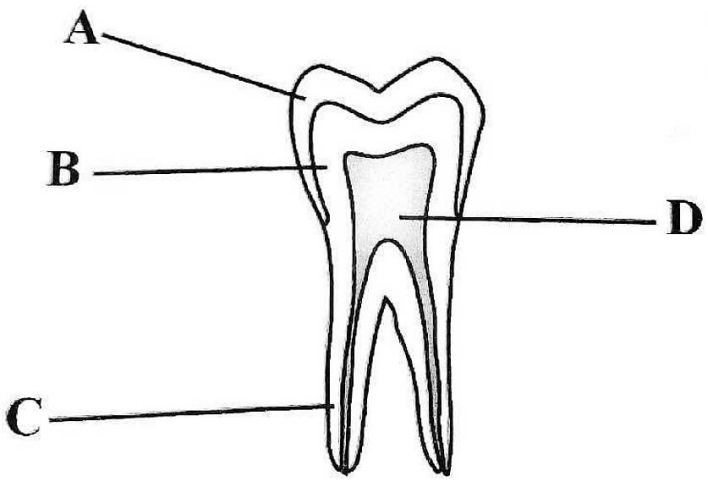
A natural active

B artificial active

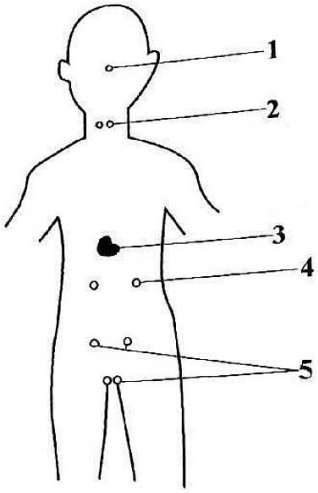
C natural passive

D artificial passive

22 The diagram shows the structure of a tooth.
Which part, **A**, **B**, **C** or **D**, is the hardest?



23 The diagram shows the positions of the human endocrine glands.



Which hormone is secreted by gland 3?

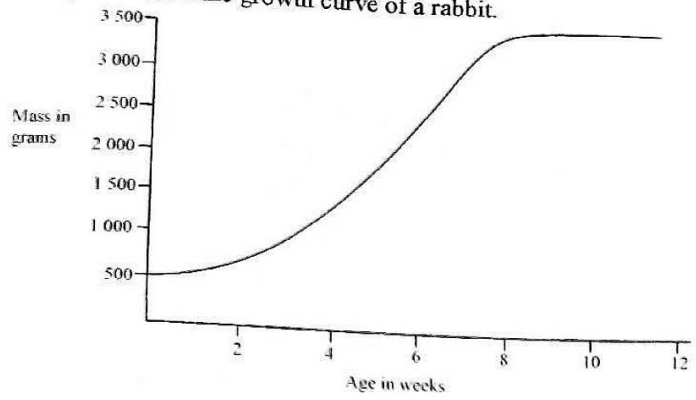
A thyroxine

B adrenaline

C testostcrone

D glucagon

24 The diagram shows the growth curve of a rabbit.



Which is the best time to slaughter the rabbit?

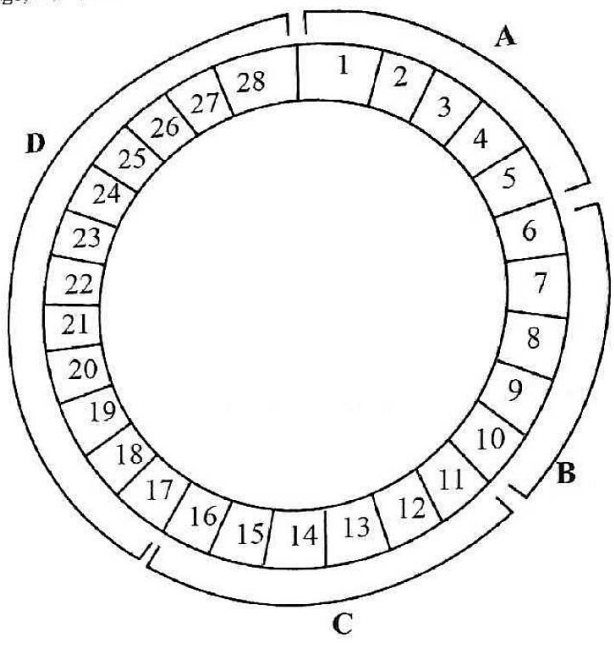
A 6 weeks

B 8 weeks

C 10 weeks

D 12 weeks

25 The diagram represents the menstrual cycle.
At which stage, **A**, **B**, **C** or **D**, is fertilisation most likely to occur?



26 Fungi are used in the production of

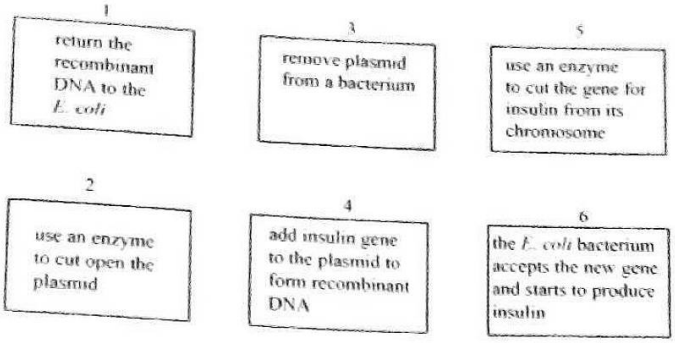
A yoghurt.

B penicillin.

C thyroxine.

D glucagon.

27 The diagram shows the stages in the production of insulin by gene technology in random order.



The correct order of the stages is

A 5 → 3 → 2 → 4 → 1 → 6.

B 1 → 2 → 3 → 4 → 5 → 6.

C 3 → 5 → 4 → 6 → 2 → 1.

D 2 → 4 → 6 → 5 → 1 → 3.

28. The approximate monohybrid ratio is

A 1:1.

B 2:1.

C 3:1.

D 4:1.

29 A new species arises from an existing species by

A evolution.

B reproduction.

C selection.

D variation.

30 An allele which expresses itself only when homozygous is

A dominant.

B homologous.

C recessive.

D codominant.

31 A man has blood group A and his wife has blood group B.

Which genotype **cannot** be inherited by any of their children?

A I^AI^A

B I^AI^B

C I^AI^O

D I^OI^O

32 In pea plants, the allele for red flowers is co-dominant with that for white flowers.

When heterozygote pea plants self pollinate, they produce,

A red flowered plants and white flowered plants in a ratio of 1:1.

B red flowered plants and no white flowered plants.

C white flowered plants and no red flowered plants.

D red flowered plants and white flowered plants in a ratio of 3:1.

33 A diagnostic feature for the kingdom plantae is the presence of

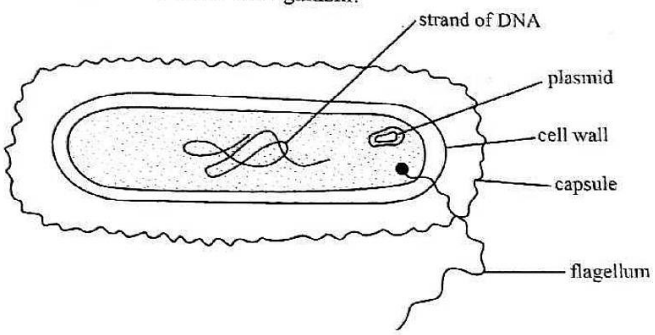
A cellulose.

B cytoplasm.

C mitochondria.

D nucleus.

34 The diagram shows the structure of an organism.



To which kingdom does the organism belong?

A fungi

B monera

C protista

D animalia

35 Which one helps improve soil fertility?

A locusts

B termites

C flukes

D caterpillars

36 One harmful human activity on the ecosystem is

A applying fertiliser just before it rains.

B adding organic matter to the soil.

C ploughing along contours.

D keeping ground cover.

37 Which food chain is correct?

A goat ⟶ grass ⟶ cow ⟶ lion

B grass ⟶ cow ⟶ man ⟶ lion

C cow ⟶ man ⟶ hyena ⟶ lion

D hyena ⟶ man ⟶ lion ⟶ vulture

38 Analgesic drugs are responsible for

A destroying fungi.

B killing bacteria.

C reducing anxiety.

D suppressing pain.

39 A degenerative disease is caused by

A malnutrition.

B genetic factors.

C infection.

D old age.

40 Which disease is non-infectious?

A cancer

B cholera

C tuberculosis

D typhoid