



**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**

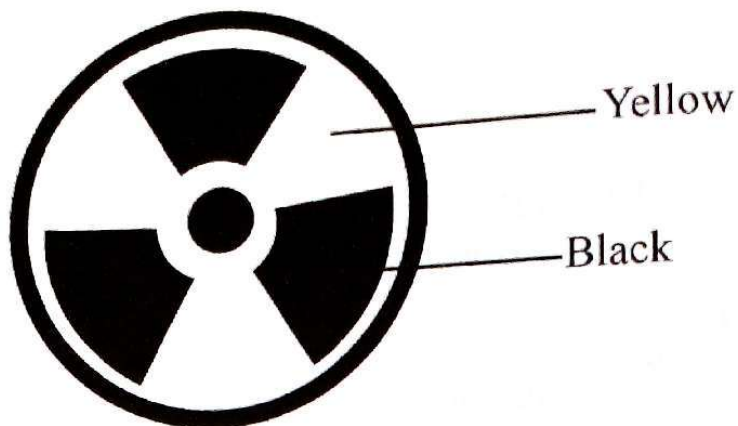
Each correct answer will score **one** mark. A mark will **not** be deducted for a wrong answer. Any rough working should be done in this booklet.

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**[Turn over**

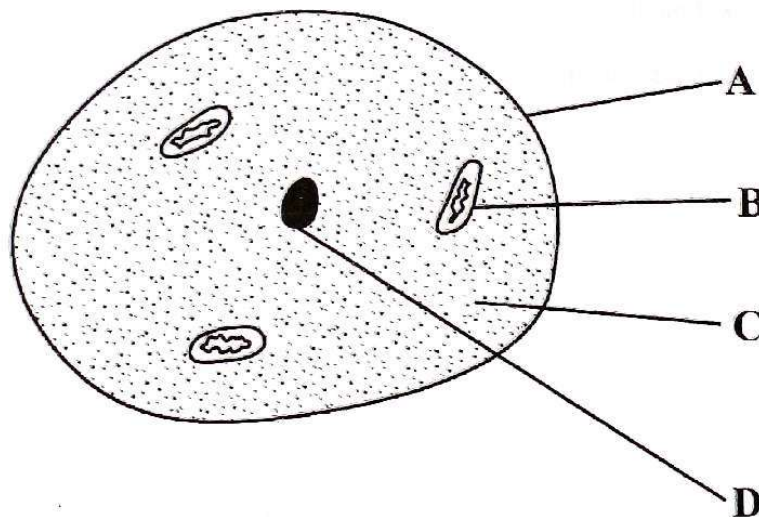
- 1 The diagram shows a safety symbol used in a science laboratory.



The symbol is a warning against

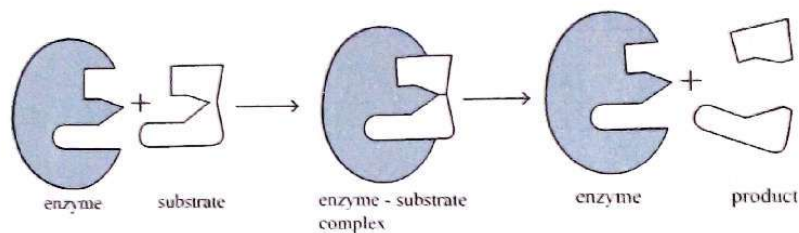
- A fires.
  - B smoke.
  - C radiation.
  - D fans.
- 2 Which branch of Biology involves the study of cells?
- A botany
  - B anatomy
  - C ecology
  - D cytology
- 3 Which carbohydrate is a polysaccharide?
- A glucose
  - B maltose
  - C starch
  - D sucrose

- 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?



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- 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.



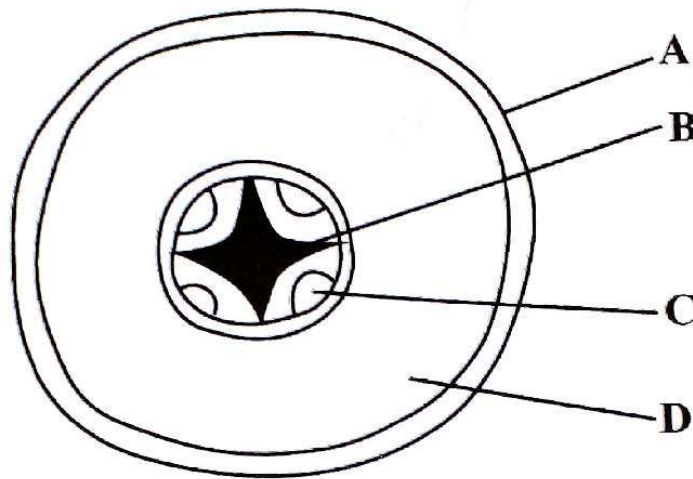
This mode of action is called

- 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?



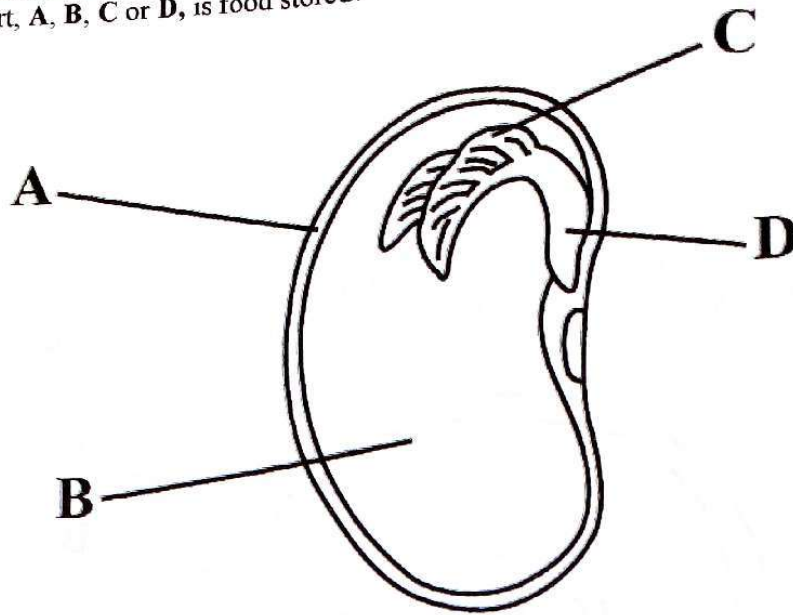
13 Which condition results in rapid transpiration?

- A low humidity
- B low light intensity
- C low temperature
- D low wind speed

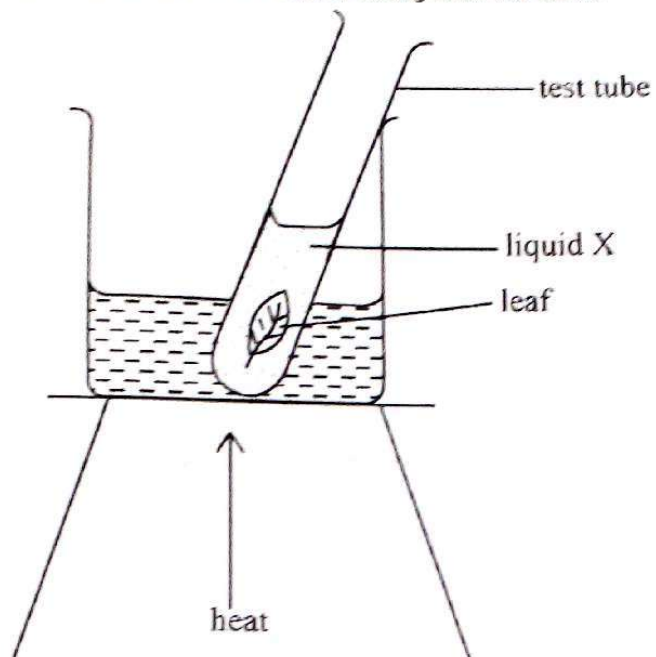
14 Which one is an advantage of sexual reproduction?

- 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.

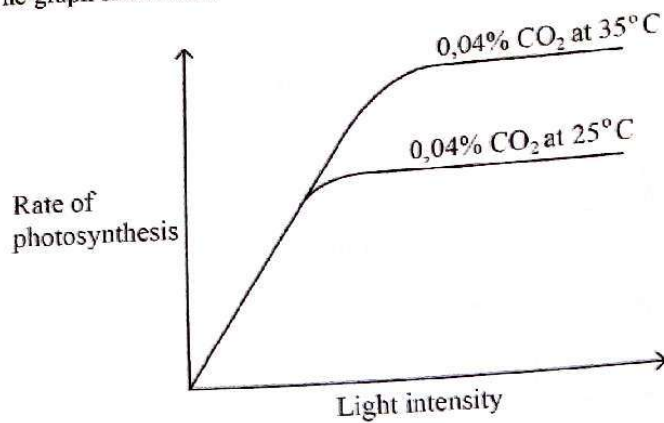


What is liquid X?

- A water
- B limewater
- C alcohol
- D iodine solution



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

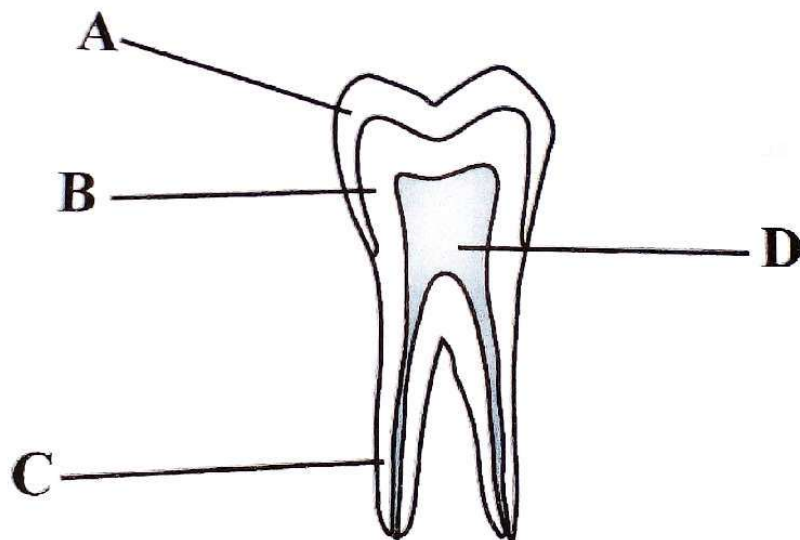


Which factor is limiting the rate of photosynthesis when the curves are flat?

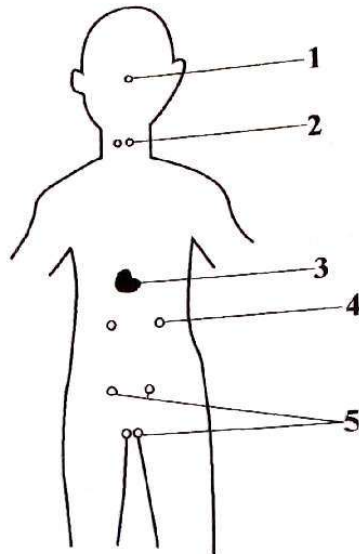
- A carbon dioxide
  - B temperature
  - C light
  - D water
- 18 A long term effect on smoking on the respiratory system is
- A constriction of bronchioles.
  - B destruction of alveoli.
  - C increased mucus production.
  - D paralysis of cilia.
- 19 Memory, intelligence and consciousness in the brain is controlled by the
- A cerebellum.
  - B cerebrum.
  - C hypothalamus.
  - D medulla oblongata.



- 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?



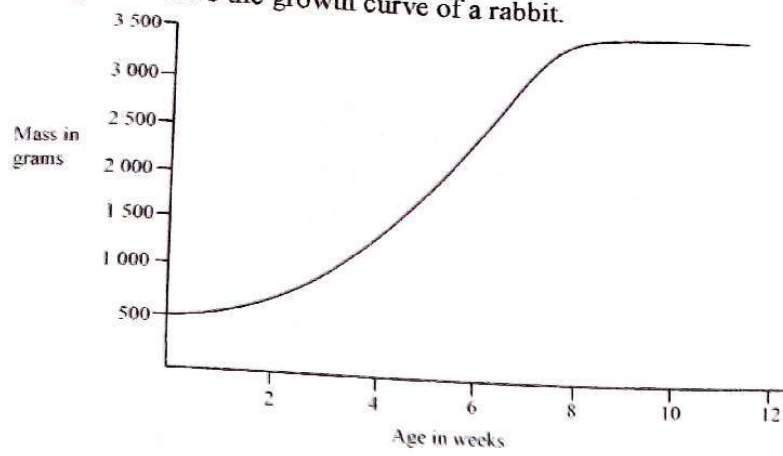
- 23 The diagram shows the positions of the human endocrine glands.



Which hormone is secreted by gland 3?

- A thyroxine
- B adrenaline
- C testosterone
- D glucagon

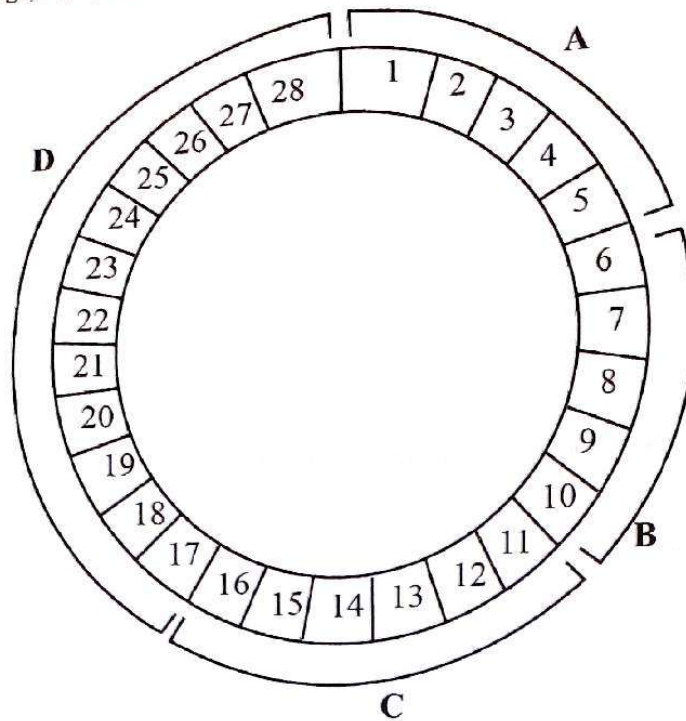
- 24 The diagram shows the growth curve of a rabbit.



Which is the best time to slaughter the rabbit?

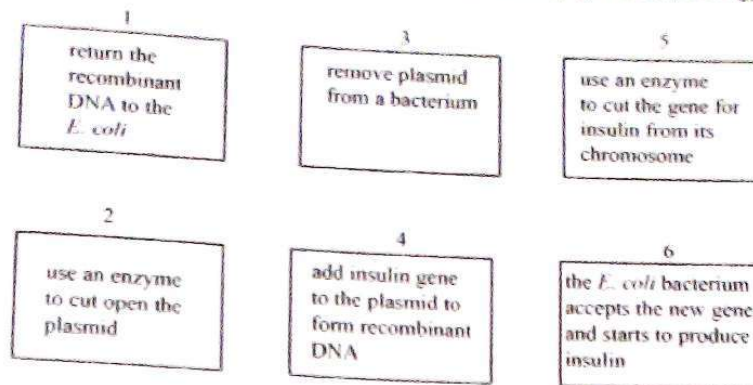
- A 6 weeks
- B 8 weeks
- C 10 weeks
- D 12 weeks

- 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.

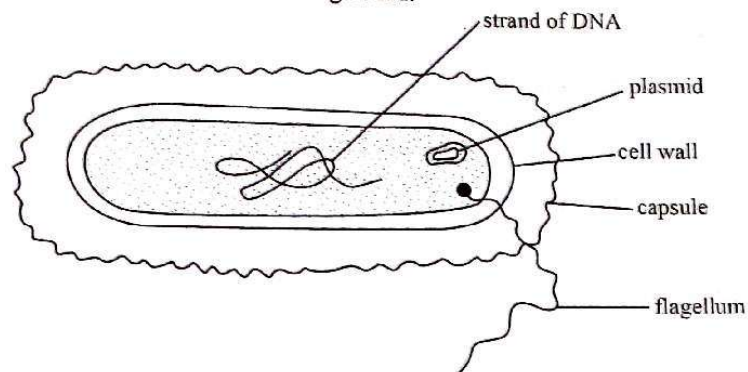


The correct order of the stages is

- 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  $I^A I^A$
  - B  $I^A I^B$
  - C  $I^A I^O$
  - D  $I^O I^O$
- 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