



**ZIMBABWE SCHOOL EXAMINATIONS COUNCIL**  
General Certificate of Education Advanced Level

**BIOLOGY**

PAPER 3 Essays

**6030/3**

**SPECIMEN PAPER**

2 hours 30 minutes

Additional materials:  
Answer paper

**TIME:** 2 hours 30 minutes

**INSTRUCTIONS TO CANDIDATES**

Write your name, centre number and candidate number in the spaces provided on the answer paper/answer booklet.

Answer any **five** questions.

Write your answers on the separate answer paper provided.

If you use more than one sheet of paper, fasten the sheets together.

**INFORMATION FOR CANDIDATES**

The number of marks is given in brackets [ ] at the end of each question or part question.

You are reminded of the need for good English and clear presentation in your answers.

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**This question paper consists of 2 printed pages.**

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- 1 (a) Outline the differences between plant cells and animal cells. [8]  
(b) Discuss the socio-economic importance of the Kingdom Prokaryotae. [6]  
(c) Explain the mode of action of enzymes. [6]
- 2 (a) Outline the roles of water in living organisms. [8]  
(b) Explain the importance of mitosis in living organisms. [6]  
(c) Explain how meiosis can result in genetic variation among offspring. [6]
- 3 (a) Describe the structure of DNA. [8]  
(b) Explain how DNA replicates. [6]  
(c) Explain features of the genetic code. [6]
- 4 (a) Outline the need for energy in living organisms. [8]  
(b) Explain, using **named** examples, how mutations can affect phenotype. [6]  
(c) Explain how natural selection may bring about evolution. [6]
- 5 (a) Describe how the structure of a chloroplast is related to its functions. [8]  
(b) Explain how xylem vessels are adapted to their functions. [6]  
(c) Explain the mechanisms by which water is transported from roots to leaves. [6]
- 6 (a) Outline the global distribution of malaria and TB. [8]  
(b) Explain the theoretical basis of genetic fingerprinting. [6]  
(c) Discuss the social implications of gene technology. [6]
- 7 (a) Describe how an action potential is generated. [8]  
(b) Discuss the ethical view points of abortion in humans. [6]  
(c) Discuss the measures introduced in the conservation of the white rhinoceros. [6]