ZIMBABWE SCHOOL EXAMINATIONS COUNCIL

General Certificate of Education Advanced Level

BIOLOGY 6030/3

PAPER 3 Essays

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.

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 rhinocerous.	[6]