

S.5 BIOLOGY ASSESSMENT TEST

TIME: 120 MINUTES

BIOLOGY PAPER TWO.

INSTRUCTIONS:

- Answer question ONE in section A and any THREE questions from section B.
- Candidates are advised to read the questions carefully, organise their answers and present them precisely and logically, illustrating with well labelled diagrams where necessary.
- Write all the answers on the answer sheets provided.

SECTION A (40 MARKS)

1. The table below shows the effect of temperature on an enzyme-controlled reaction.

Temperature/ $^{\circ}\text{C}$	0	10	20	30	40	50	60	70
Rate of reaction (arbitrary units)	0.0	1.1	2.7	4.3	8.5	2.8	0.0	0.0

(a) Represent the above information graphically. (06 marks)

(b) Basing on your graph,

(i). Describe the effect of temperature on the rate of reaction. (04 marks)

(ii). Explain the effect of temperature on the rate of reaction in b(i) above (09 marks)

(c) Explain the mechanisms of following forms of enzyme inhibition.

(i) Competitive inhibition (04 marks)

(ii) Non-competitive inhibition (04 marks)

(iii) End-product inhibition (03 marks)

(d) pH is another factor that effects the rate of an enzyme-controlled reaction. Fully explain the effect of pH on the rate of an enzyme-controlled reaction. (04 marks)

(e) Briefly distinguish between the following

(i). an active site and an allosteric site (02 marks)

(ii). Cofactor and coenzyme (02marks)

(iii). Denaturation and Renaturation (02 marks)

SECTION B (60 MARKS)

2. (a) Describe the fluid-mosaic model of the cell membrane structure (08 marks)

(b) Give the advantages of each of the following organelles in a cell.

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- (i) Nucleus (04 marks)
 - (ii) Golgi apparatus (04 marks)
 - (iii) Endoplasmic Reticulum (04 marks)
3. (a) Describe the changes in the;
- (i) Pressure potential,
 - (ii) Water potential of the plasmolysed plant cell when inserted in a hypotonic solution. (12 marks)
- (b) Describe the importance of changes in turgidity in plants. (08 marks)
4. (a) What is meant by alternation of generation? (02 marks)
- (b). Describe the life cycle of a named Bryophyte. (09 marks)
- (c) Compare the differences in alternation of generation of the moss and ferns (04 marks)
- (d) What is the significance of alternation of generation (05 marks)
5. Describe the influence of biotic factors, excluding man, on the distribution and abundance of organisms. (20 marks)
6. a) Describe the adaptation and functions of various epithelial tissues. (12 marks)
- b) Using a named coelenterate illustrate the organization of cells at tissue level. (08 marks)

END!!!

“Success is through repeated practice”