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P530/2

Biology

Paper 2

July 2019

2½ Hours



ACEITEKA JOINT MOCK EXAMINATIONS, 2019
UGANDA ADVANCED CERTIFICATE OF EDUCATION
BIOLOGY

PAPER: 2

TIME: 2 HOURS 30 MINUTES

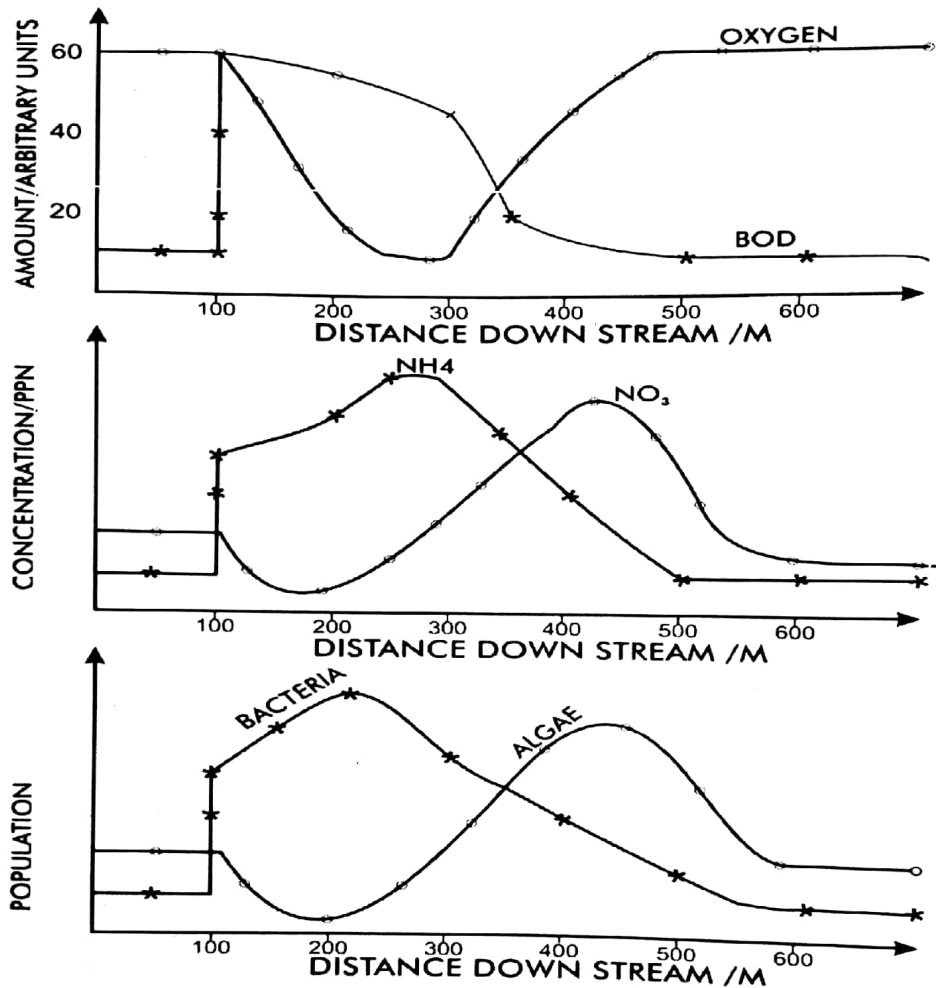
INSTRUCTIONS TO CANDIDATES

- This paper consists of Sections **A** and **B**.
- Answer question one in **Section A** plus three others from **Section B**.
- Candidates are advised to read the questions carefully, organize their answers and present them precisely and logically, illustrating with well labeled diagrams wherever necessary.

SECTION A (40 MARKS)

1. The graphs below indicate the effect of sewage discharge at 100 meters of the river towards its biotic and abiotic environments.

Study them carefully and answer the questions that follow.



- a) Define the term Biochemical Oxygen Demand

(02 marks)

- b) Explain the effect of sewage discharge towards;

- i) Oxygen,
- ii) BOD, stream, downstream

(10 marks)

- c) Account for the changes in the concentration of;
- i) Ammonium ions,
 - ii) Nitrate ions, downstream
- (12 marks)

- d) Account for the changes in the population of;
- i) Bacteria,
 - ii) Algae, downstream
- (12 marks)

- e) Suggest any four likely effects of the population changes of algae to the river between 200m – 450m, when it occurs for a long period of time, downstream
- (04 marks)

SECTION B (60 MARKS)

2. a) Describe the hormonal control of post – fertilization changes in human female up to breast feeding.
- (15marks)

- b) How is the viability of the sperms in humans maintained?
- (05 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) Account for the negative water potential of any solutions.
- (08 marks)

4. a) Explain the changes which occur to the bitten part of the human body by the wasp.
- (10 marks)

- b) Describe how the B lymphocyte defend the body against infections.
- (10 marks)

5. a) What is meant by phytochromes?
- (05 marks)

- b) Describe the control of flowering in tobacco by the phytochrome
- (07 marks)

- c) Describe geotropism in plants
- (08 marks)

6.a) What is meant by positive feedback? *(02 marks)*

b) Explain positive feedback during;

i) Nervous transmission

ii) Parturition

(10 marks)

c) Explain how the deviation of thyroxine level in blood is reduced to the norm. *(08marks)*

*******End*******