*NAME…………………………………………….. ………………………………………..... SIGN……………………..…………….*

**Uganda Advanced Certificate of Education**

**BIOLOGY P530/2**

**TIME: 2½ HOURS**

**INSTRUCTIONS TO CANDIDATES**

*Question one in sections* ***A*** *is compulsory and any three questions in section* ***B***

**SECTION A**

1. The graph below shows changes in the standing crop biomass of producers, primary consumers and certain environmental variables in a lake during the course of one year. Study the curves and answer the questions that follow.



(a).Describe the changes in the standing crop biomass of consumers and producers *(06 marks)*

(b)(i).Explain the observed changes in the physical factors in the river? (10marks)

(ii).What is the importance of increased light penetration into the water body to the ecosystem in the river? (04marks)

(c).Explain the relationship between producers and

(i).nutrients *(05 marks)*

(ii).primary consumers *(05 marks)*

(d).Suggest the

(i).probable sources of nutrients in the lake *(02 marks)*

(ii).reasons for the rapid rise in the nutrients up to the end of the year *(02 marks)*

(e)(i).Predict what would happen to the ecosystem if the prevailing conditions continue for yet another year (02marks)

(ii).Explain your answer *(04 marks)*

***SECTION B***

2. (a) Compare the structure of the cardiac and skeletal muscles. (06 marks)

(b) Explain how each of the following is suited to its function:

(i) Cardiac muscle. (07 marks)

(ii) Skeletal muscle. (07 marks)

3. a. Describe the significance of physical properties of water to organisms. (12marks).

(b). Explain why lipids are better storage materials in animals than carbohydrates. (08marks)

4. a)With examples, distiquish between the cell inclusion and a cell organelle. (03marks)

(b) Describe the structure of the cell membrane according to the fluid mosaic model (11marks)

(c) Describe the roles of certain membranous and non-membranous organelles in the formation of the glycol-proteins within a cell. (06marks)

TR DERICK@2024