Name's of student……
School Name……

BIOLOGY
PAPER II
P530/2
SENIOR SIX
OCTOBER

COMPREHENSIVE BIOLOGY TRANSFORMATION INITIATIVE.
UACE
POST MOCK EXAMINATION

S.6 CANDIDATES-2023

PAPER 2

2 HOURS AND 30 MINUTES

INSTRUCTIONS TO THE CANDIDATES:

This paper consists of section A and B.

Answer question one in section A plus 3 questions in section B

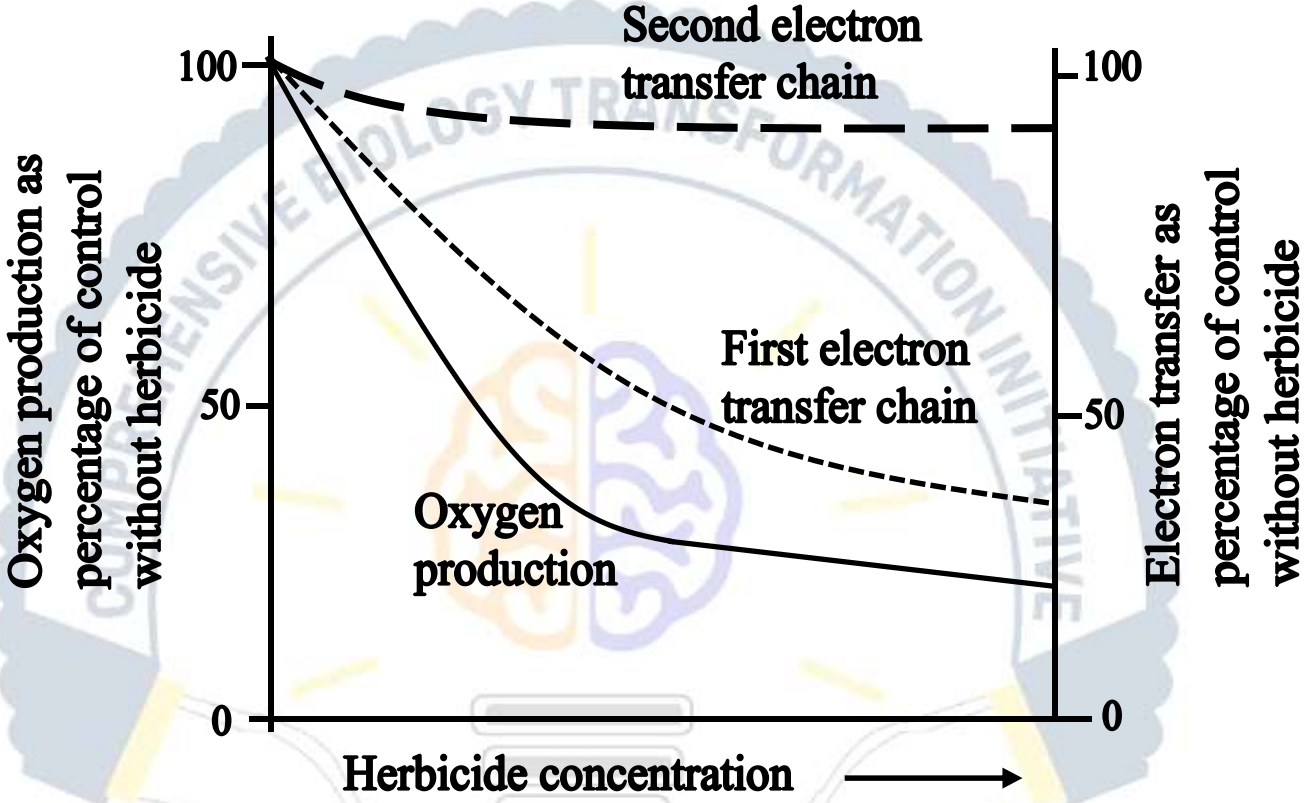
Candidates are advised to read questions carefully, organize their answers and present them precisely and logically, illustrating with well labelled diagram wherever necessary.

Adapt to the 21st Century pedagogical skills- 2023.

SECTION A (40 MARKS)

N.B. THIS SECTION IS COMPULSORY TO ALL STUDENTS.

1. Scientists investigated the effect of herbicide on the light-dependent reaction in green micro-algae, *chlorella vulgaris*. Isolated chloroplasts were placed in well buffered and isotonic medium and exposed to sunlight. They measured the effects of different concentrations of herbicide on the production of Oxygen and on the electron transfer chains. The graph shows the results.



a) Compare the oxygen production and the first electron transfer chain. (05 marks)

b) Describe the effect of the herbicide concentration on the following measurable variables.

- **(i) Oxygen production. (03 marks)**
- **(ii) First electron transfer chain. (03 marks)**
- **(iii) Second electron transfer chain. (02 marks)**

c) Explain the effect of herbicides above in (a) on the following.

- **(i) Oxygen production. (07 marks)**
- **(ii) Electron transfer chains. (10 marks)**

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d) Suggest explanation for the following observations.
(i) Herbicides cause death of plants. (05 marks)
(ii) Isolated chloroplast placed in well buffered and isotonic solution. (05 marks)

SECTION B (60 MARKS)

CHOOSE THREE QUESTIONS OF YOUR CHOICE.

2a) Describe the feedback control of the heart rate following sensory input from.
(i) Baroreceptors. (05 marks)
(ii) Chemoreceptors. (05 marks)
b) Explain how adrenaline secretion from adrenal gland prepares the body to vigorous activity. (10 marks)

3a) Describe the role of proteins in the functioning of the nerve fibre. (10 marks)
b) Explain the effect of drugs on the synaptic transmission. (10 marks)

4a) Describe the role of reproductive isolation and differential selection in increasing species diversity. (10marks)
b) Explain the following observations.
(i) Abrupt speciation occurs as a result of Polyploidy and hybridization. (05 marks)
(ii) Relationship between niche and convergent evolution. (05 marks)

5a) With examples of plant hormones, explain how the following mechanisms are shown.
(i) Synergism. (05 marks)
(ii) Antagonism. (05 marks)
b) How does photoperiodism affect the following.
(i) Dormancy in plants. (05 marks)
(ii) Breeding behaviour in animals? (05 marks)

6a) Describe the integration of the following organic molecules into the respiratory pathway.

(i) Protein. (05 marks)

(ii) Lipids. (05 marks)

b) (i) Explain the significance of Co-enzymes in respiration. (05 marks)

(ii) Describe the process of alcoholic fermentation in plants. (05 marks)

SUCCESS TO ALL S.6 CANDIDATES.