

BOWEN UNIVERSITY, IWO
COLLEGE OF AGRICULTURE ENGINEERING AND SCIENCE
BLY 302: ENVIRONMENTAL BIOLOGY
2022/2023 SECOND SEMESTER EXAMINATION

Answer questions **one** and any two others.

Time allowed: 2 hours 20 minutes.

1. (a) Planting of trees is one of the possible solutions to greenhouse effect. The table below shows the relationship between the age of the tree planted and its rate of carbon fixation.

Age of tree (years)	Carbon fixation (tC/Ha/y)
0	0
2	0.2
4	6
8	12
12	18
16	24
20	30

- (i) Use the information above to plot a graph to determine the relationship. (6 marks)
- (ii) Use the graph to determine the amount of carbon that is fixed in a year by a 5-year-old tree and a 18-year-old tree. (4 marks)
- (b) Write on any **five** impacts of humans on the terrestrial environment. (10 marks)
- (c) Discuss concisely contributions of environmental agents into the environment through the following human activities: (10 marks)
- (i) Drugs (ii) Food additives (iii) Industrial wastes (iv) Wars
2. (a) Write a short note on the different strata in the atmosphere based on vertical temperature. (10 marks)
- (b) What are the main stratifications in a tropical lake? (3 marks)
- (c) Enumerate at least six (6) properties that determine the type and number of organisms that can be found in a typical tropical lake. (3 marks)
- (d) List at least **four** importance of the lithosphere (4 marks)
3. (a) What is air pollution? (2 marks)
- (b) Write on the sources, health effects and control of carbon monoxide pollution. (10 marks)
- (c) Briefly describe the greenhouse effect. (8 marks)
4. (a) Describe the mechanism by which ultraviolet radiation causes mutation. (10 marks)
- (i) Ultraviolet radiation (ii) Base analogues
- (b) (i) Enumerate any **six** major categories of cancer, citing the source of each. (6 marks)
- (ii) List **four** criteria that increase an individual risk of developing cancer when exposed to carcinogens. (4 marks)
5. (a) Enumerate the major types of human-environment interactions. (6 marks)
- (b) Explain the similarity and difference between conservation and preservation. (2 marks)
- (c) Write on any **four** subdivisions of conservation. (12 marks)