

INTERIM JOINT MATRICULATION BOARD
AHMADU BELLO UNIVERSITY
ZARIA



INTERIM JOINT MATRICULATION BOARD EXAMINATION 2016

SUBJECT: BIOLOGY PAPER I: GENERAL BIOLOGY AND BOTANY
DATE SCHEDULED: THURSDAY 25TH FEBRUARY, 2016
TIME ALLOWED: THREE HOURS (3 HRS)

INSTRUCTION: Answer questions **ONE (1)** and any **THREE (3)** other questions. Question ONE carries 40 marks. The others carry 20 marks each. Use clearly labelled diagrams to illustrate your answers wherever appropriate.

1. Following is a table presenting data on the concentration (mg) of Chlorophyll in the leaves of tomato plants grown over a period of 16 weeks with or without the application of nitrogenous fertilizer.

Time	No fertilizer	Fertilizer applied
2	15.5	16.5
4	20.5	29.0
6	44.0	57.0
8	49.0	80.5
10	70.5	150.0
12	80.0	170.0
14	75.0	175.0
16	65.0	180.0

- a) Used the data to answer the questions that follow:
- i. Plot a histogram to represent the data.
 - ii. Compute the percentage increase in chlorophyll content from week 2 to week 10 in each category of plants.
 - iii. Compute the percentage change from week 12 to week 16 in the control plants.
 - iv. State your observation on the trend of chlorophyll concentration in the two categories of plants.
 - v. What is the role of nitrogenous substances in chlorophyll structure.
- b) Explain the following statistical terms:
- i. Discrete variable
 - ii. Variance
 - iii. Measures of central tendency.

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- c) Answer the following questions by providing the most appropriate responses in the blank spaces. Write down your answers in the answer booklet.
- i. The fruiting body of Ascomycetes is _____.
 - ii. During photosynthesis in C4 plants, the primary carbon acceptor is _____.
 - iii. The plant hormone that regulates apical dominance is _____.
 - iv. Sexual reproduction in Oomycetes is by _____.
 - v. The respiratory process that yields alcohol in plant cells is called _____.
2. (a) What are meristems and their functions?
(b) Outline how named physical factors of the environment influence plant growth.
3. Describe the process of double fertilization in angiosperms.
4. (a) Explain the term 'alternation of generations'.
(b) Describe the life cycle of a named moss.
5. (a) State the beneficial roles of bacteria in agriculture and food processing giving specific examples.
(b) State the ways of food processing by which bacterial activity is controlled.
(c) Outline the general characteristics of viruses.
6. Write explanatory notes on the following ecological terms.
- (a) Acid rain
 - (b) Ozone layer depletion
 - (c) Ecological succession
 - (d) Community.
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