



ROBERT MUGABE SCHOOL OF EDUCATION AND CULTURE

DEPARTMENT OF SCIENCE AND TECHNOLOGY EDUCATION

**BACHELOR OF EDUCATION SECONDARY IN-SERVICE HONOURS
DEGREE BIOLOGY**

LEVEL 2 SEMESTER 1

EXAMINATION QUESTION PAPER

MODULE CODE	CBIS 211
MODULE NARRATION	PLANT PHYSIOLOGY
DATE	2024
DURATION	3 HOURS

INSTRUCTIONS TO CANDIDATES:

- 1. Answer any **three** questions.**
- 2. All questions carry equal marks**

1a i) With the help of a clearly labelled diagram, describe the Fluid Mosaic model of the membrane structure. (10)

ii) ATP formation in chloroplasts is based on the stepwise conservation of energy. Trace the conservation of energy from the initial absorption of light by an antennae chlorophyll molecule to the final formation of ATP and NADPH. (15)

2. Asses the assertion that the structure of the xylem and phloem tissues are adapted to perform their functions efficiently. (25)

3a. i) Seeds normally require an extended treatment of some sort in order to break dormancy. Discuss (20)

ii) State any three elements that are essential for growth of plants and identify their roles. (5)

4. (a) Examine the crucial roles played by the following plant growth regulators in plant physiology: Absciscic acid, Gibberellins and Ethylene (12)

(b) Give a detailed account of the genetic and metabolic events which occur during seed germination (13)

5. a) Asses the sentiment that global warming and climate change will have a bearing on the distribution and diversity of C3 and C4 plants. (10)

b) Describe the structure and functions of the following plant cell organelles.

i) Mitochondria (5)

ii) Vacuole (5)

iii) Chloroplasts (5)

END