

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA  
DEPARTMENT OF PLANT BIOLOGY  
FIRST SEMESTER (BTECH.) EXAMINATION, 2017/2018 SESSION

COURSE CODE: PLB 312  
COURSE TITLE: PLANT PHYSIOLOGY I  
COURSE UNIT: 3  
TIME ALLOWED: 2 HOURS

INSTRUCTION: ANSWER ANY FOUR (4) QUESTIONS IN ALL; TWO (2) QUESTIONS FROM EACH SECTION

SECTION A

1.
  - a. Write notes on physiological activities in a seed during germination
  - b. Dormancy comes after reproduction and precedes germination. Discuss
  - c. State 3 importance of dormancy
2.
  - a. With the aid of diagrams explain the differences between the two types of germination
  - b. Explain factors affecting seed germination
4. Write notes on the following:
  - a. Structures involved in ascent of sap
  - b. Rate and direction of translocation of water
  - c. Regulation of transpiration

SECTION B

4.
  - a. Briefly explain osmosis
    - i. as special type of diffusion
    - ii. using the terms 'hypotonic isotonic and hypertonic' as key words
  - b. Write notes on each of the following:
    - i. All desert plants are xerophytes but not the reverse.
    - ii. Osmotic potential and Pressure potential
5.
  - a. Differentiate between vital and physical theories of ascent of sap
  - b. Enumerate any two flaws each of the following theories of translocation of water:
    - i. Atmospheric pressure theory
    - ii. Root pressure theory
  - c. Explain the mechanism of 'opening and closing of stomata' as proposed by Von Mohl
6.
  - a. Give a comprehensive explanation on how salinity of soil can affect water absorption by plants
  - b. Write notes on each of the following:
    - i. Phases of photosynthesis
    - ii. Types of transpiration