

2012
B.A./B.Sc. (Hons.) Third Semester
Botany
Paper - A: Plant Physiology

Time allowed: 3 Hours

Max. Marks: 36

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting one question from each Unit.

x-x-x

I. A) MCQ:-

- a) RQ in case of protein is
i) 1
ii) Less than 1
iii) ∞
iv) More than 1
- b) Kranz anatomy is found in case of
i) C₂ plants
ii) C₃ plants
iii) C₄ plants
iv) CAM plants
- c) In moving air, the rate of transpiration
i) Decreases
ii) Remain unaffected
iii) Increases
iv) Remains same
- d) Amino-Purines are associated with
i) Auxins
ii) Gibberellins
iii) Cytokinins
iv) Ethylene

B) Fill in the blanks:-

- e) Seed affected by light are called as _____.
- f) Apical dominance is the function of _____.
- g) Light driven formation of ATP is called _____.
- h) Elements which minimize the toxic effects of elements are called _____.
- (8x1)

UNIT - I

- II. a) What is transpiration? Write its types.
b) Describe the structure of stomata and mechanism for its opening and closing.(3,4)
- III. a) Write the criteria for essentiality of elements.
b) Describe the passive absorption of ions by Ionic exchange method. (3,4)

P.T.O.

(2)

UNIT – II

- IV. a) What are chlorophylls? Write their characteristics.
b) Describe the structures of photosystems. (4,3)
- V. Describe C₄ cycle. How C₄ plants differ from C₃ plants? (5.2)

UNIT – III

- VI. a) Describe the process of ETC and oxidative phosphorylation.
b) Write down energy chart of Kerb's Cycle. (5.2)
- VII. Write short notes on:-
a) Nitrogenase enzyme
b) Structure of nodule
c) Nitrogen fixing organisms (2,2,3)

UNIT – IV

- VIII. a) What is Growth? Explain different phases of it.
b) Write the physiological role and applications of Gibberellins. (3,4)
- IX. Write notes on:-
a) Photoperiodism and types of plants on its basis.
b) Vernalization (5.2)