

KERALA AGRICULTURAL UNIVERSITY
B.Sc. (Hons.) Agriculture – 2007 Admission – IVth Semester
Final Examination - July/August 2009

Cat.No. : Crps 2201
Course : Crop Physiology (2+1)

Max. marks: 80
Time : 3 hours

I. Fill up the blanks/State whether true or false/Choose the correct answer:

(any ten)

(10 x 1 = 10)

1. Dry seeds absorb water by ----- for germination
2. Water potential value of pure water is -----
3. Guttation is associated with special types of stomata called -----
4. Annual plants have ----- senescence habit.
5. The dark reaction in photosynthesis takes place in Grana True / false
6. Gibberellins Promote Fruit Set True / false
7. ----- deficiency causes Whip tail in cauliflower
8. Water absorption by spending metabolic energy is -----
9. Stomata is kept open during the night in
A. Maize B. Pineapple C. Rice D. wheat
10. Glycolytic enzymes are present in
A. Chloroplast B. Peroxisome C. Mitochondria D. Cytosol
11. Transpiration pulls water through the xylem by creating
A. Positive pressure B. Negative pressure C. Neutral pressure D. None
12. RQ value for proteins is
a) < 1
b) > 1
c) = 1
d) 0

II. Write short notes / answers etc on any ten

(10 X 3 = 30)

1. Write the steps involved in Mechanism of stomatal opening
2. Write the Criteria for essentiality of mineral nutrient
3. Briefly explain photosynthetic pigments and their role in photosynthesis
4. List out the difference between C₃ and C₄ plants
5. Mention and define the last step in aerobic respiration?
6. Bring out the conditions for the occurrence of Photorespiration
7. Explain briefly the physiological and biochemical changes during seed development
8. What are all the methods used for testing seed viability ?
9. Differentiate climactic and non climactic fruits with examples
10. Write about Apoplastic and Symplastic transport

11. Explain the different growth analytical parameters
12. What are Plant Growth regulators ? . explain the role in crop production

III. Write short essays on any six of the following (6 x 5 = 30)

1. Define drought? Explain the plant adaptations and mechanisms to thrive in drought.
2. Discuss the source sink relationship in crop plants.
3. Describe C₃ mechanism with examples
4. Enumerate the significant role of major elements and symptoms of deficiencies and corrective measures.
5. Bring out the physiological aspects of fruit ripening including roles of hormones.
6. Define osmosis and explain how water is taken up by plants ?
7. Bring out the mechanism of nutrient uptake.

IV. Write short essays on any one of the following (1 x 10 = 10)

1. Explain in detail the morphological, physiological and biochemical changes during seed germination and factors affecting seed germination.
2. Classify the different abiotic stresses affecting crop productivity and explain the water stress effects and ameliorative measures.