

KERALA AGRICULTURAL UNIVERSITY
B.Sc (Hons.) Ag. 2012 Admission
IVth Semester Final Examination- August-2014

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

Marks: 80
Time: 3 hours

-
- I) Fill up the blanks/Match the following/State True or False/Define: (10 x 1=10)**
- a) Mature xylem cells lack semipermeable membrane (True or False)
 - b) Respiratory quotient of fats is lower than carbohydrates (true or False)
 - c) Expand the terms NADPH and FMN
 - d) In a C₄ plant like maize, one hexose molecule is produced for which the CO₂ cycles are
i) Same as that of in C₃ plants ii) > C₃ plants iii) < C₃ plants iv) Not known
- e) Carriers that transport two types of ion in the same direction are referred as _____

Match the following

<u>Symptom</u>	<u>Nutrient</u>
a) Whip tail disease	i Iron
b) Bronzing	ii Copper
c) Little leaf	iii Molybdenum
d) Exanthema in trees	iv Zinc
e) Heart rot in sugar beet	v Boron

II) Write Short notes on any ten (10 x 3=30)

- a) Differentiate between Humus and Mineralization
- b) Factors affecting seed germination
- c) Three Essential criteria of nutrients?
- d) Blackman's law of limiting factors
- e) Draw Structure of Photosynthetic transport of electron chain reaction in the thylakoid membrane
- f) Nitrification and denitrification process-give equations with suitable examples
- g) Differentiate between Absolute growth rate and Net Assimilation rate

- h) Factors influencing seed storage
- i) Differentiate between Natural Hormone and growth regulators
- j) Enzymes and their classification
- k) Fruit ripening hormone
- l) What is vernalization and its significance in plants? Give suitable examples

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

- a) Cyclic and non cyclic photophosphorylation
- b) Water uptake and transport
- c) Depict stomatal opening of an Isobilateral and dorsiventral leaves
- d) Commercial plant growth regulators
- e) Differentiate between the terms growth, development and differentiation
- f) Biological nitrogen fixation
- g) Explain the methods of testing seed viability and vigour
- h) What is imbibition? Where does it occur and how is it different from that of diffusion?

IV Write an essay on any one of the following (1 x 10=10)

1) Describe Hatch-slack cycle with suitable diagrams and how is it different from that of CAM plants?

Or

2) Discovery of GA, Biosynthesis and various physiological functions in plants