

B.Sc. (Ag.) Honours Semester-II Examination, 2017**Course No: CPH-121 (Crop Physiology)**

Signature of Centre Superintendent

Roll No. : (in figure) _____ (in words) _____

Student Index No. _____ Regn. No. _____ of _____

Time : Two Hours**Full marks : 40**

Questions are of value as indicated in the margin

Part - I
(Objective and Short Answer Type)
(Use only ball point pen)**Time : 20 minutes****Full marks : 10**

- Note:** 1. Answer in question paper itself.
2. Striking, rewriting or overwriting are not allowed in the objective type questions.

1. Fill up the blanks with most appropriate words (any ten): 0.5×10=5

- (i) Formula of net assimilation rate (NAR) is _____.
- (ii) The amino acid which is precursor of the phytohormone indol acetic and (IAA) is _____
- (iii) _____ is a gaseous plant hormone
- (iv) Paclobutrazole inhibits biosynthesis of _____.
- (v) Plant hormone that delays senescence is _____.
- (vi) The mineral element _____, is component of all amino acids.
- (vii) Whiptail disorder of cauliflower is caused due to _____ deficiency
- (viii) Heart rot of sugar beat is caused due to _____ deficiency.
- (ix) _____ is an example of long day cereal plant.
- (x) Light phase reactions of photosynthesis occur in _____ of chloroplast.
- (xi) In CAM plants, photosynthesis occurs in the cells of _____ tissue.
- (xii) Kranz anatomy is special feature of _____ plants.

2. Tick (✓) the correct alternatives (any ten) : 0.5×10=5

- (i) The correct formula of RGR is
(a) $\frac{(W_2 - W_1)(\log eL_2 - \log eL_1)}{(L_2 - L_1)(t_2 - t_1)}$ (b) $\frac{(W_2 - W_1)}{(t_2 - t_1)}$ (c) $\frac{(\log eW_2 - \log eW_1)}{(t_2 - t_1)}$ (d) none of these
- (ii) Generation of ATP in the light phase of photosynthesis is :
(a) oxido-phosphorylation (b) photo-oxido phosphorylation (c) photophosphorylation
(d) oxidative phosphorylation
- (iii) Khaira disease in rice is caused due to the deficiency of :
(a) Calcium (b) magnesium (c) zinc (d) iron

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- (iv) The Primary pigment of photosynthesis that participate in photochemical reaction is :
(a)chlorophyll b (b) chlorophyll a (c) carotenes (d) xanthophylls
- (v) Photorespiratory pathway is also called:
(a)C₁ Cycle (b) C₂ cycle (c) C₃ cycle (d) C₄ cycle
- (vi) Transfer of photoassimilate from the photosynthesizing source tissue to sieve tube elements of a vascular tissue is called:
(a)phloem loading (b) xylem loading (c) xylem unloading (d) phloem unloading
- (vii) Apical dominance is generally suppressed by the hormone :
(a)Auxins (b)Gibberellins (c) Cytokinins (d) Absciscic acid
- (viii) Hormone involved in imposition of dormancy in the buds during autumn is :
(a)Auxins (b) gibberellins (c) cytokinins (d) absciscic acid
- (ix) Complete oxidation of one molecule of pyruvic acid generates:
(a)36 ATP (b) 15 ATP (c) 12 ATP (d) 38 ATP
- (x) Water use efficiency is highest in
(a)C₃ plants (b) C₄ plants (c) CAM plants (d) none of them
- (xi) Some reactions of photorespiration occur in
(a)Golgi body (b) Endoplasmic reticulum (c) Peroxysome (d) Polysome
- (xii) Tetrazolium test is done to assess the seeds for their
(a)vigour (b) genetic purity (c) load of pathogen (d) viability

B.Sc. (Ag.) Honours Semester-II Examination, 2017

Course No: CPH-121

(Crop Physiology)

Part - II
(Descriptive Type)

Time : 100 Minutes

Full marks : 30

Questions are of value as indicated in the margin

Answer *any four* questions from the following.

3. Write short notes on **any five** of the following: 1.5×5=7.5
- i) Phases of endosperm development
 - ii) Vernalization
 - iii) Role of Phytochrome in short day plants flowering
 - iv) Embryogenesis
 - v) Different parts of seed
 - vi) Source organ
 - vii) PEP carboxylase
 - viii) Guttation
4. Differentiate between the following (**any three**) : 2.5×3=7.5
- (i) Photosynthesis and photorespiration
 - (ii) Determinate growth habit & indeterminate growth habit
 - (iii) CGR and RGR
 - (iv) Oxidative phosphorylation and photophosphorylation
 - (v) C₄ plants and CAM plants
5. What is growth & development? Discuss in brief about photomorphogenesis. What is senescence? Describe different types of senescence observed in different plants? 1.5+1.5+1+3.5=7.5
6. What is seed dormancy? Mention the various types of seed dormancy. Discuss about various methods of breaking seed dormancy. Mention the advantages and disadvantages of seed dormancy. 1+1.5+3+2=7.5
7. What is respiration? Mention its significance. Describe glycolytic pathway with an appropriate flowchart clearly indicating the enzymes, coenzymes and cofactors. How does respiratory quotient vary with the substrate of respiration? 1+1.5+5=7.5
8. What is meant by light phase of photosynthesis? What is its importance? Mention the pigments which are involved in this phase. Describe the Z-scheme of light reactions of photosynthesis along with a flow chart.
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