

Syllabus for Agriculture (Botany) RAGI and RAGII

Plant anatomy : General structure of higher plants, the cell, Meristems; Mature tissues, Primary vegetative body of the plant, Secondary body of the plant.

Plant morphology : Morphological features of root, stem, leaf; Morphological adaptations; Pollination and fertilization.

Plant Physiology: Carbon assimilation, Respiration, Metabolism, Amino acids, Carbohydrates, Proteins, Hormone, Lipids, Soil.

Cytology : Concept of Gene and protein.

Principles of Plant Ecology : The nature of ecosystems, Energy flow in ecosystems, Ecology of populations, The organization and dynamics of ecological communities including ecological succession.

Sample Questions

RAGI Botany

Select the correct answer from those given in the following :

1. The stomata in the leaf are open when the guard cells are
 - (A) at low turgor
 - (B) at high turgor
 - (C) at moderate turgor
 - (D) at absence of turgor
2. A herbivore is a
 - (A) secondary consumer
 - (B) primary consumer
 - (C) tertiary consumer
 - (D) autotrophic organism
3. The cytoplasm is bounded by a membrane which is known as
 - (A) plasmalemma
 - (B) tonoplast
 - (C) endoplasmic reticulum
 - (D) middle lamella
4. A dicot root differs from monocot root in one of the following
 - (A) presence of piliferous layer
 - (B) presence of exodermis
 - (C) presence of illdeveloped pith
 - (D) separate radial vascular bundles
5. Pith is well developed in
 - (A) monocot root
 - (B) dicot root
 - (C) both the above
 - (D) none of the above
6. Double fertilization is characteristic of
 - (A) pteridophyte
 - (B) bryophyte
 - (C) gymnosperm

- (D) angiosperm
7. To be evolutionarily successful, a mutation must occur in
 - (A) germplasm DNA
 - (B) somatoplasm DNA
 - (C) plasma proteins
 - (D) centrioles
 8. Sudden changes appear in the organisms due to spontaneous mutations
 - (A) chromosomal aberrations
 - (B) gene recombinations
 - (C) point mutations
 9. A plant which is respiring anaerobically and to it if you supply oxygen, this will lead to
 - (A) increase in ATP synthesis in mitochondria
 - (B) decrease in ATP synthesis in mitochondria
 - (C) no effect
 - (D) none of the above

Sample Questions
RAGII Botany

1. By the help of experiments differentiate between osmotic pressure and root pressure.
2. Write critical notes on :
 - (A) mode of auxin action, (B) two different regions having the same amount of annual rainfall exhibit different vegetational constituents.
3. Which is more important in the life of a vascular plant - xylem, phloem or cambium ? Why?
4. Account for :

Plants developing under the influence of drying winds are abnormally short.
5. Write short notes on :
 - (A) Physiological draught.
 - (B) Ecological amplitude
6. Distinguish between ring-porous and diffuse porous woods.
7. Mention the role of phytohormones in dormancy, sex expression, cell differentiation and extension growth of plants.
8. Why is it that in most ecological successions the last stage is long lasting?
9. How would you distinguish between an auto and an allopolyploid?