

B. Sc. Part-II

BOTANY

Paper-II (Plant Physiology and Biochemistry)

Multiple choice question

1. What happens during endosmosis?
 - (a) Water molecule diffuse from lower water potential to higher water potential
 - (b) Water molecule diffuse from higher water potential to lower water potential
 - (c) Water molecules move from a solution towards pure water
 - (d) Water molecules move from cell towards its exterior
2. Which of the following is not a micronutrient?
 - (a) Magnesium
 - (b) Molybdenum
 - (c) Boron
 - (d) Zinc
3. The movement of photosynthate through phloem is always
 - (a) from source to sink
 - (b) from sink to source
 - (c) bi directional
 - (d) none of these
4. Non-cyclic photophosphorylation results in the production of
 - (a) NADH
 - (b) NADPH
 - (c) ATP
 - (d) ATP and NADPH
5. Glycolysis is known as:
 - (a) EMP pathway
 - (b) TCA pathway
 - (c) carbon sequestration
 - (d) None of the above
6. Which of the following is a reducing sugar?
 - (a) Dihydroxyacetone
 - (b) Erythrulose
 - (c) Glucose
 - (d) All of the above
7. Which of the following statements is true about proteins?
 - (a) Proteins are polymers of glucose
 - (b) Proteins are polymers of amino acids
 - (c) Proteins are polymers of peptide bonds
 - (d) Proteins are polymers of disulfide bridges

8. The change over from vegetative to reproductive phase in plants take place in response to

- (a) Length of the day
- (b) Severity of temperature
- (c) Oxygen content in air
- (d) Mainly the food material available in the soil

9. Nastic movements differ from tropic movements in being

- (a) Nondirectional
- (b) Movements of variation
- (c) Stimulated by chemicals
- (d) Directional

10. This is the precursor of Indole-3-acetic acid

- (a) Methionine
- (b) Tryptophan
- (c) Glycine
- (d) Isopentynyl pyrophosphate

11. Wilting of plant occurs when:

- (a) phloem is blocked
- (b) xylem is blocked
- (c) both xylem and phloem are blocked
- (d) a few old roots are removed

12. in old trees or woody plants transpiration occurs through:

- (a) Stomata
- (b) Root
- (c) Bark
- (d) Lenticels

13. Mass flow hypothesis was put forward by:

- (a) Swanson
- (b) Buchnan
- (c) Munch
- (d) Kurosawa

14. Quantasome contains:

- (a) 200 chl molecule
- (b) 300 chl molecule
- (c) 230 chl molecule
- (d) 250 chl molecule

15. Which of the following is most essential for seed germination:

- (a) Light
- (b) Water
- (c) Minerals
- (d) High temperature

Short answer question

1. What is stomatal index?
2. What is the difference between carrier proteins and pump?
3. What is the respiratory quotient of various types of respiratory substrates?
4. Define carbohydrates.
5. When is an element said to be 'essential' for the plants?
6. Describe the nature of enzymes.
7. What do you mean by passive absorption?
8. Give example of chemotactic movements.
9. Why is the Krebs cycle called TCA cycle?
10. How will the absence of leghemoglobin influence nitrogen fixation in plants?

Long answer question

1. Discuss the various theories of ascent of sap in plants.
2. What do you mean by DPD? Explain its significance in determining the movement of water molecules.
3. What are photosystems? Explain their role in photosynthesis.
4. With the help of diagrams explain the structure of proteins.
5. What is seed dormancy? Give various methods of breaking dormancy.