

M.SC. BOTANY
FOURTH SEMESTER
BIOCHEMISTRY & PLANT PHYSIOLOGY
MSB - 403B

(Use Separate Answer Scripts for Objective & Descriptive)

Duration : 3 hrs.

Full Marks : 70

(PART-A: Objective)

Time : 20 min.

Marks : 20

Choose the correct answer from the following:

1X20=20

- Sugar translocation is increased by the application of
 - K
 - N
 - P
 - B
- Photosynthesis is a
 - Reductive process
 - Endergonic process
 - Anabolic process
 - All of these
- Plastocyanin protein contains
 - Copper
 - Sulphur
 - Cobalt
 - Boron
- Dormancy occurs due to condition within the dormant organ itself is called
 - Imposed dormancy
 - Innate dormancy
 - Induced dormancy
 - All of above
- In which of the following, exalbuminous seeds are found?
 - Gram
 - Mango
 - Sunflower
 - All of these
- Which element is found highest in protoplasm ?
 - Oxygen
 - Hydrogen
 - Carbon
 - Nitrogen
- Off season flowering in plants is positive by giving treatment of
 - Ptotoperiodism
 - Vernalization
 - Both a and b
 - Thermoepiodism
- If the accumulation ratio in absorption of nutrients is greater than one , then it is known as
 - Active absorption
 - Saturated absorption
 - Passive absorption
 - Unsaturated absorption
- Water potential of chemically pure water is
 - 0
 - 0.5
 - 1
 - 1

10. The light in which maximum photosynthesis occurs is
 - a. Black
 - b. Red
 - c. Green
 - d. Blue
11. The primary electron acceptor in PS-I is
 - a. Cytochrome
 - b. Ferredoxin
 - c. Plastoquinone
 - d. Plastocyanin
12. In a plant, the pigments are found in
 - a. Stroma
 - b. Whole chloroplast
 - c. Grana
 - d. Both a and b
13. Which of the following growth hormone promotes femaleness ?
 - a. IAA
 - b. GA3
 - c. ABA
 - d. Cytokinin
14. Which of the following growth hormone induce bud dormancy
 - a. IAA
 - b. GA3
 - c. ABA
 - d. Ethylene
15. Phytochrome is used in
 - a. Germination
 - b. Transpiration
 - c. Flowering
 - d. All of these
16. Which nutrient is evolved in the biosynthesis of IAA ?
 - a. Mn
 - b. S
 - c. Zn
 - d. Mo
17. Major limiting factor in C3 plants is
 - a. Light
 - b. Carbondioxide
 - c. Temperature
 - d. All of these
18. All cytokinins are derivatives of
 - a. Adenin
 - b. Guanines
 - c. GA3
 - d. Uracil
19. In which cell organelle, PEP carboxylation is taking place in C4 plants is
 - a. Bundle sheath cell
 - b. Chlorophyll cell
 - c. Mesophyll cell
 - d. None of these
20. A hypotonic solution means
 - a. Weak solution
 - b. Strong solution
 - c. Higher salt containing solution
 - d. Higher sugar containing solution

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PART-B : Descriptive

Time : 2 hrs. 40 min.

Marks : 50

[Answer question no.1 & any four (4) from the rest]

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| 1. Write the differences between C ₃ , C ₄ and CAM pathways of carbon fixation | 10 |
| 2. Describe the carrier concept theory. | 10 |
| 3. What is phloem transport? Describe the source-sink relationship and partitioning in plants. | 3+7=10 |
| 4. What is acid growth effect? Describe the role auxin. | 4+6=10 |
| 5. What is seed dormancy? Write the methods of breaking seed dormancy. | 2+8=10 |
| 6. What is photoperiodic induction? Explain the role of phytochrome in flowering. | 2+8=10 |
| 7. Write the significance of cyclic and non cyclic electron transport. | 5+5=10 |
| 8. What is red drop? Describe the regeneration of RUBP in Calvin Cycle. | 4+6=10 |

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