

**B.Sc. BOTANY
FOURTH SEMESTER
PLANT PHYSIOLOGY
BSB-402**

**SET
B**

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs.

Full Marks: 70

Time: 30 mins.

Marks: 20

(Objective)

1 × 20 = 20

Choose the correct answer from the following:

- Which will die first in girdled plant?
 - Fruits
 - Shoots
 - Roots
 - All of the above
- Wilting symptoms are not visible externally in case of:
 - Incipient wilting
 - Permanent wilting
 - Temporary wilting
 - None of the above
- Which metal ion is a constituent of chlorophyll?
 - Iron
 - Copper
 - Magnesium
 - Zinc
- When CO₂ is added to PEP, the first stable product synthesised is:
 - Pyruvate
 - Phosphoglycerate
 - Glyceraldehyde-3-phosphate
 - Oxaloacetate
- Which of the following are directly associated with photosystem I?
 - Harvesting of light energy by ATP
 - Receiving electrons from plastocyanin
 - P680 reaction-center chlorophyll
 - Passing electrons to plastoquinone
- During growth the exponential phase is:
 - Cell division
 - Cell enlargement
 - Cell maturation
 - Senescence
- The growth and development of the seed embryo into seedling is called:
 - Stratification
 - Seed germination
 - Seed priming
 - Scarification
- Wheat is a:
 - Short day plant
 - Long day plant
 - Day neutral plant
 - Indeterminate plant
- Which one is a biotic stress?
 - Pesticide
 - Flooding
 - Salt stress
 - Competition
- Flowering stimulus is perceived by:
 - Shoot apex
 - Buds
 - Leaves
 - Flowers

11. Symplastic movement takes place through:
 - a. Xylem
 - b. Cytoplasm
 - c. Cell wall
 - d. Intracellular spaces
12. Transpiration takes place from:
 - a. Cuticle
 - b. Lenticel
 - c. Stomata
 - d. All of the above
13. Deficiency symptoms of Nitrogen and Potassium are visible first in:
 - a. Senescent leaves
 - b. Roots
 - c. Young leaves
 - d. Buds
14. Chemosynthetic bacteria obtain energy from:
 - a. Sun
 - b. Infra red rays
 - c. Inorganic chemicals
 - d. Organic substances
15. CAM plants keep stomata closed in daytime, thus reducing loss of water. They can do this because they:
 - a. Fix CO₂ into organic acids during the night
 - b. Fix CO₂ into sugars in the bundle-sheath cells
 - c. Fix CO₂ into pyruvate in the mesophyll cells
 - d. Use the enzyme phosphofructokinase, which outcompetes rubisco for CO₂
16. Enzyme are basically:
 - a. Fats
 - b. Vitamins
 - c. Proteins
 - d. All of the above
17. The term enzyme is:
 - a. Latin
 - b. Greek
 - c. English
 - d. German
18. A substance, usually non protein and of low molecular weight, necessary for the action of some enzyme is called as:
 - a. Mineral
 - b. Vitamins
 - c. Coenzyme
 - d. Apoenzyme
19. Sun flower is:
 - a. Long day plant
 - b. Short day plant
 - c. Day neutral plant
 - d. None of these
20. The plant hormone responsible for bud dormancy:
 - a. Ethylene
 - b. IAA
 - c. ABA
 - d. GA3

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(Descriptive)

Time : 2 hr. 30 mins.

Marks : 50

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

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| 1. Differentiate between:
a) C ₃ and C ₄ plants
b) Pigment system I and Pigment system II | 5+5=10 |
| 2. What are the peculiarities of Kranz anatomy? Describe the mechanism of photosynthesis in C ₄ plants of PCK-Me type. | 4+6=10 |
| 3. Write short notes on: (<i>any two</i>)
a) Osmosis
b) Transpiration pull and cohesion theory
c) Plasmolysis and deplasmolysis | 5+5=10 |
| 4. Write the deficiency symptoms of Nitrogen, Sulfur, Iron, Calcium and Molybdenum in plants. | 2×5=10 |
| 5. Describe the methods of breaking seed dormancy. | 10 |
| 6. What is co enzyme? Describe the classification of enzyme. | 2+8=10 |
| 7. What are the differences between Long day plant and Short day plant? | 10 |
| 8. What is stress? Describe the effect of heat stress. | 2+8=10 |

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