

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

**SET  
B**

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs.

Full Marks: 70

Time: 30 mins.

**(Objective)**

Marks: 20

Choose the correct answer from the following:

1 × 20 = 20

- 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 CO<sub>2</sub> 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 CO <sub>2</sub> into organic acids during the night  | b. Fix CO <sub>2</sub> into sugars in the bundle-sheath cells                        |
| c. Fix CO <sub>2</sub> into pyruvate in the mesophyll cells | d. Use the enzyme phosphofructokinase, which outcompetes rubisco for CO <sub>2</sub> |
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 |



**(Descriptive)**

Time : 2 hr. 30 mins.

Marks : 50

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

- |   |        |
|---|--------|
| 1. What are the differences between Long day plant and Short day plant?   | 10     |
| 2. What are the peculiarities of Kranz anatomy? Describe the mechanism of photosynthesis in C <sub>4</sub> plants of PCK-Me type. | 4+6=10 |
| 3. What is stress? Describe the effect of heat stress.  | 2+8=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. Write short notes on:<br>a) Osmosis<br>b) Transpiration pull and cohesion theory   | 5+5=10 |
| 8. Differentiate between:<br>a) C <sub>3</sub> and C <sub>4</sub> plants<br>b) Pigment system I and Pigment system II             | 5+5=10 |

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