

B.Sc. BOTANY
FOURTH SEMESTER [SPECIAL REPEAT]
PLANT PHYSIOLOGY
BSB-402

SET
A

Duration: 3 hrs.

Full Marks: 70

(Objective)

Time: 30 mins.

Marks: 20

Choose the correct answer from the following:

1 × 20 = 20

- Symplastic movement takes place through:
a. Xylem
b. Cytoplasm
c. Cell wall
d. Intracellular spaces
- Which will die first in girdled plant?
a. Fruits
b. Shoots
c. Roots
d. All of the above
- Transpiration takes place from:
a. Cuticle
b. Lenticel
c. Stomata
d. All of the above
- Wilting symptoms are not visible externally in case of:
a. Incipient wilting
b. Permanent wilting
c. Temporary wilting
d. None of the above
- Deficiency symptoms of Nitrogen and Potassium are visible first in:
a. Senescent leaves
b. Roots
c. Young leaves
d. Buds
- Which metal ion is a constituent of chlorophyll?
a. Iron
b. Copper
c. Magnesium
d. Zinc
- Chemosynthetic bacteria obtain energy from:
a. Sun
b. Infra red rays
c. Inorganic chemicals
d. Organic substances
- When CO₂ is added to PEP, the first stable product synthesised is:
a. Pyruvate
b. Phosphoglycerate
c. Glyceraldehyde-3-phosphate
d. Oxaloacetate
- 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

10. Which of the following are directly associated with photosystem I?
 a. Harvesting of light energy by ATP
 b. Receiving electrons from plastocyanin
 c. P680 reaction-center chlorophyll
 d. Passing electrons to plastoquinone
11. Enzymes are basically:
 a. Fats
 b. Vitamins
 c. Proteins
 d. All of the above
12. During growth the exponential phase is:
 a. Cell division
 b. Cell enlargement
 c. Cell maturation
 d. Senescence
13. The term enzyme is:
 a. Latin
 b. Greek
 c. English
 d. German
14. The growth and development of the seed embryo into seedling is called:
 a. Stratification
 b. Seed germination
 c. Seed priming
 d. Scarification
15. 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
16. Wheat is a:
 a. Short day plant
 b. Long day plant
 c. Day neutral plant
 d. Indeterminant plant
17. Sun flower is:
 a. Long day plant
 b. Short day plant
 c. Day neutral plant
 d. None of these
18. Which one is a biotic stress?
 a. Pesticide
 b. Flooding
 c. Salt stress
 d. Competition
19. The plant hormone responsible for bud dormancy:
 a. Ethylene
 b. IAA
 c. ABA
 d. GA3
20. Flowering stimulus is perceived by:
 a. Shoot apex
 b. Buds
 c. Leaves
 d. Flowers

(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 is stress? Describe the effect of heat stress. | 2+8=10 |
| 3. Write short notes on: (<i>any two</i>) | 5+5=10 |
| a) Osmosis | |
| b) Transpiration pull and cohesion theory | |
| c) Plasmolysis and deplasmolysis | |
| 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 peculiarities of Kranz anatomy? Describe the mechanism of photosynthesis in C ₄ plants of PCK-Me type. | 4+6=10 |
| 8. Differentiate between: | 5+5=10 |
| a) C ₃ and C ₄ plants | |
| b) Pigment system I and Pigment system II | |

= = *** = =