

Bs/BCC-12(T)

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(FYUGP)

(6th Semester)

BOTANY

(MAJOR)

Paper : BCC-12(T)

(Plant Physiology)

Full Marks : 75

Pass Marks : 40%

Time : 3 hours

*The figures in the margin indicate full marks
for the questions.*

- 1.** Define guttation. Discuss the cohesion-tension theory for uptake of water in plants.

3+12=15

Or

- 2.** Write notes on the following :

7½×2=15

(a) Mechanism of stomatal movement

(b) Symplast and Apoplast pathway of water movement

(2)

3. Differentiate between macro- and micronutrients. Discuss in detail the methods of study and use of nutrient solutions. 5+10=15

Or

4. Write notes on the following : $7\frac{1}{2} \times 2 = 15$

- (a) Function and deficiency symptoms of essential elements—N, P, K and Mg
- (b) Essential and beneficial elements

5. Discuss in detail the transport of ions across cell membrane. Differentiate between active and passive absorption. $7\frac{1}{2} + 7\frac{1}{2} = 15$

Or

6. Write notes on the following : $7\frac{1}{2} \times 2 = 15$

- (a) Phloem loading and unloading
- (b) Uniport, symport and antiport

7. Enumerate the plant growth regulators and give a brief account of their physiological effect. 15

Or

8. Write notes on the following : $7\frac{1}{2} \times 2 = 15$

- (a) Florigen concept
- (b) Vernalization and seed dormancy

(3)

9. What is the primary role of ATP in membrane transport processes? Describe the mechanism and significance of proton ATPase pump in generating ion gradients.

$7\frac{1}{2} + 7\frac{1}{2} = 15$

Or

10. Write short notes on any *three* of the following :

$5 \times 3 = 15$

- (a) Cytochromes and phototropins
- (b) Source-sink relationship
- (c) Phytochrome
- (d) Transpiration and anti-transpirant

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