

**2024/TDC (CBCS)/EVEN/SEM/  
BTCHCC-202T/002**

**TDC (CBCS) Even Semester Exam., 2024**

**BIOTECHNOLOGY**

**( 2nd Semester )**

Course No. : BTCHCC-202T

**( Plant Physiology )**

Full Marks : 50

Pass Marks : 20

Time : 3 hours

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

**UNIT—I**

**1.** Answer any *two* of the following questions :  $2 \times 2 = 4$

- (a) What do you mean by quiescent center?
- (b) What are complex permanent tissues?
- (c) What is secondary growth?

**2.** Answer any *one* of the following questions :        6

- (a) Write a note on growth rings.  
Differentiate between leaf anatomy of  
dorsi-ventral and isobilateral leaf.      $3+3=6$

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- (b) Describe the theories regarding shoot apical meristems in plants.

UNIT—II

3. Answer any *two* of the following questions :  $2 \times 2 = 4$

- (a) Define transpiration pull.  
(b) What do you mean by guttation?  
(c) What is diffusion?

4. Answer any *one* of the following questions : 6

- (a) Describe the mechanisms of opening and closing of stomata.  
(b) What is plasmolysis? Describe in detail how plants absorb water from soil.  $1+5=6$

UNIT—III

5. Answer any *two* of the following questions :  $2 \times 2 = 4$

- (a) What are the criteria for identification of essentiality of nutrients?  
(b) What do you mean by macronutrients? Give one example.  
(c) Name two symptoms of deficiency of nutrients in plants.

( 3 )

6. Answer any *one* of the following questions : 6

- (a) Write a note on mechanism of food transport in plants. Write down the functions of micronutrients.  $5+1=6$   
(b) What are essential trace elements? Differentiate between micro- and macro-elements. Add a note on chlorosis.  $2+2+2=6$

UNIT—IV

7. Answer any *two* of the following questions :  $2 \times 2 = 4$

- (a) Write a note on CAM plants.  
(b) What is compensation point?  
(c) What are thylakoids?

8. Answer any *one* of the following questions : 6

- (a) Describe in detail the process of photophosphorylation.  
(b) Write notes on the following :  $3 \times 2 = 6$   
(i) Calvin cycle  
(ii) Photorespiration

( 4 )

UNIT—V

9. Answer any *two* of the following questions :  $2 \times 2 = 4$

- (a) What do you mean by seed germination?
- (b) Write a note on vernalization.
- (c) What is growth curve?

10. Answer any *one* of the following questions : 6

- (a) What is seed dormancy? Describe the methods of breaking seed dormancy.

$2 + 4 = 6$

- (b) Write a short note on cytokinins. Add a note on photoperiodism.

$3 + 3 = 6$

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