

**2025 / FYUG / ODD / SEM /
BOTDSC-302T / 230**

FYUG Odd Semester Exam., 2025

BOTANY

(5th Semester)

Course No. : BOTDSC-302T

(Plant Physiology)

Full Marks : 70

Pass Marks : 28

Time : 3 hours

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

UNIT—I

Answer any two questions :

2×2=4

- (a) Write a brief note on water potential.
- (b) What do you mean by antitranspirant?
Give one example.
- (c) Differentiate between symplastic and
apoplastic modes of transport of water.

(Turn Over)

(2)

2. Answer any one question :

- (a) With the help of suitable model, describe the mechanism of phloem loading and unloading. What do you mean by the source and sink relationship? $8+2=10$
- (b) Write short notes on the following : $5 \times 2 = 10$
- (i) Aquaporin and its function
 - (ii) Pressure flow model of water transport

UNIT—II

3. Answer any two questions :

$2 \times 2 = 4$

- (a) Where do light-dependent and light-independent reactions of photosynthesis take place?
- (b) What do you mean by CAM plant? Give one example of CAM plant.
- (c) Differentiate between oxidative phosphorylation and photo-phosphorylation.

Answer any one question :

10

- (a) With the help of suitable model, describe the process of non-cyclic photophosphorylation. Write the differences between cyclic and non-cyclic photophosphorylation. $8+2=10$

- (b) Write notes on the following : $5 \times 2 = 10$
- (i) Photorespiration
 - (ii) Kranz anatomy

UNIT—III

Answer any two questions :

$2 \times 2 = 4$

- (a) What are trace elements? Give examples.
- (b) What is chlorosis?
- (c) Write the importance of Fe in plants.

Answer any one question :

10

- (a) With the help of suitable model, describe the mechanism of mineral uptake and translocation.

(Turn Over)

(Continued)

(4)

(b) Write notes on the following :

5×2=10

(i) Active and passive transports

(ii) Importance and deficiency symptoms of Mg and Mn in plants

UNIT—IV

7. Answer any two questions :

2×2=4

(a) What do you mean by scarification?

(b) What do you mean by day-neutral plant? Give one example.

(c) Name two nitrogen fixing bacteria.

8. Answer any one question :

10

(a) Discuss about the physiological role of auxin and abscisic acid.

5+5=10

(b) Write notes on the following :

5×2=10

(i) Phytochrome

(ii) Circadian rhythms

UNIT—V

9. Answer any two questions :

2×2=4

(a) What do you mean by oxidative stress?

(b) Name some factors responsible for causing abiotic stress in plants.

(c) Write the function of catalase in plants.

Answer any one question :

10

(a) Discuss about different types of physiological responses adopted by plants against abiotic stress.

(b) Write short notes on the following :

5×2=10

(i) Reactive oxygen species (ROS)

(ii) ABA signalling in plants

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