

**2025/FYUG/EVEN/SEM/
BOTDSM-252/060**

FYUG Even Semester Exam., 2025

**BOTANY
(4th Semester)**

Course No. : BOTDSM-252

(Plant Physiology)

Full Marks : 70

Pass Marks : 28

Time : 3 hours

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

UNIT—I

1. Answer any *two* questions : 2×2=4

(a) Differentiate between apoplastic and symplastic pathways.

(b) Write two factors that affect transpiration.

(c) What do you mean by water potential?

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(Turn Over)

(2)

2. Answer any *one* question : 10
- (a) Discuss the mechanism of opening and closing of stomata with suitable model.
 - (b) Discuss the mechanism of transport of water by plants.

UNIT—II

3. Answer any *two* questions : 2×2=4
- (a) Differentiate between active and passive transports.
 - (b) Write the composition of phloem sap.
 - (c) Write the role of Mg in plant.
4. Answer any *one* question : 10
- (a) With the help of suitable diagram, describe the mechanism of phloem loading and unloading in plants.
 - (b) Write the physiological roles and deficiency symptoms of the following :
 - (i) Mn
 - (ii) Zn
 - (iii) N
 - (iv) P

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(Continued)

(3)

UNIT—III

5. Answer any *two* questions : 2×2=4
- (a) What do you mean by oxidative phosphorylation? Where it occurs?
 - (b) What is CAM? Give one example.
 - (c) What is red drop?

6. Answer any *one* question : 10
- (a) What do you mean by photorespiration? Discuss the mechanism of photorespiration.
 - (b) Write notes on the following : 5×2=10
 - (i) Pentose phosphate pathway
 - (ii) Glycolysis

UNIT—IV

7. Answer any *two* questions : 2×2=4
- (a) What are the main groups of plant hormones?
 - (b) Write two functions of Absciscic acid.
 - (c) Name one hormone helps in cell division.

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8. Answer any *one* question : 10

(a) Discuss physiological roles of auxin and Gibberellin in plants. 5+5=10

(b) Write short notes on : 5×2=10

(i) Role of ethylene in plants

(ii) Cytokinin

UNIT—V

9. Answer any *two* questions : 2×2=4

(a) What are the different types of photoperiodism?

(b) Differentiate between SDP and LDP.

(c) What do you mean by photomorphogenesis?

10. Answer any *one* question : 10

(a) Write short notes on : 5×2=10

(i) Vernalization

(ii) Role of phytochrome in flowering

(b) Discuss about the role of red light and far-red light on photomorphogenesis with examples.

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