

**2024/TDC (CBCS)/EVEN/SEM/
BOTHCC-601T/035**

TDC (CBCS) Even Semester Exam., 2024

BOTANY

(6th Semester)

Course No. : BOTHCC-601T

(Plant Metabolism)

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* from the following questions : 2×2=4
 - (a) What is catabolism? Give one example.
 - (b) What is feedback inhibition? Give one example.
 - (c) What is isoenzyme? Give one example.
2. Answer any *one* from the following questions : 6
 - (a) What is allosteric enzyme? Write the properties of allosteric enzymes. How allosteric enzyme regulates enzyme activity? 1+2+3=6

(2)

- (b) Write about the factors responsible for regulation of metabolic pathway of living organism.

UNIT—II

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

- (a) Define antenna molecules.
(b) Differentiate between cyclic and non-cyclic photophosphorylations.
(c) What is Kranz anatomy? Where is it found?

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

- (a) What is photorespiration? Write the mechanism of photorespiration. $1 + 5 = 6$
(b) Write notes on the following : $3 + 3 = 6$
(i) Photosynthetic reaction centre
(ii) CAM plants

UNIT—III

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

- (a) What is glycolysis? Where does it take place?

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(Continued)

(3)

- (b) What do you mean by anaplerotic reaction?

- (c) Why is Krebs cycle also called TCA cycle?

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

- (a) What is oxidative phosphorylation? Add a note on mechanism of mitochondrial electron transport. $1 + 5 = 6$
(b) Write in detail about the mechanism of pentose phosphate pathway. What is its importance? $5 + 1 = 6$

UNIT—IV

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

- (a) What is ligand? Give one example.
(b) Write the role of calcium ion in signal transduction.
(c) Write two importances of ATP.

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

- (a) What do you mean by phosphorylation? What are the different types of phosphorylation? Add a note on photophosphorylation. $1 + 2 + 3 = 6$

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(Turn Over)

- (b) What do you mean by signal transduction? With the help of suitable model, describe the mechanism of signal transduction.

UNIT—V

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

- (a) What do you mean by β -oxidation of fatty acids?
- (b) Write the function of nitrogenase enzyme.
- (c) What do you mean by transamination? Give one example.

10. Answer any one from the following questions : 6

- (a) What do you mean by gluconeogenesis? How gluconeogenesis differs from glycolysis? Write the importance of gluconeogenesis. $1+2+3=6$
- (b) What is leghemoglobin? With the help of suitable model, describe the process of symbiotic nitrogen fixation. $1+5=6$

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