

Total No. of Printed Pages—3

**6 SEM TDC BOTH (CBCS) C 13**

**2 0 2 4**

( May )

**BOTANY**

( Core )

Paper : C-13

**( Plant Metabolism )**

Full Marks : 53  
Pass Marks : 21

Time : 3 hours

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

(a) Choose the correct answer : 1×3=3

- (i) In chloroplast, light reaction occurs in stroma / inner membrane / cristae / thylakoid disc.
- (ii) The number of ATPs produced by  $\text{NADH} + \text{H}^+$  from glycolysis through malate-aspartate shuttle in electron transport system is two / three / four / five.
- (iii) Receptors are primary effectors / secondary messengers / ligands / signal transducers.

( Turn Over )

BOTANY

( 2 )

(b) Fill in the blanks :  $1 \times 2 = 2$

(i) In chlorophyll b, instead of a methyl group, an \_\_\_\_\_ group is present.

(ii) Triglycerides are hydrolyzed by lipases into fatty acids and \_\_\_\_\_.

2. Write short notes on any three of the following :  $4 \times 3 = 12$

(a) Allosteric modulation

(b) CAM cycle

(c) Boyer's conformational model

(d) Transamination

(e) MAP kinase cascade

3. Write explanatory notes on any two of the following :  $6 \times 2 = 12$

(a) Glycolysis

(b) Synthesis and degradation of sucrose

(c) Gluconeogenesis

(d) Mitochondrial electron transport system

(e) Q cycle

24P/886

( Continued )

( 3 )

4. What is dark reaction in photosynthesis? Describe the mechanism of dark reaction in  $C_3$  plants.  $2+10=12$

Or

Differentiate between anabolism and catabolism. Explain the pathways of anabolism and catabolism. How can the pathways be regulated?  $2+8+2=12$

5. Describe schematically the pentose phosphate pathway of glucose oxidation. What is its significance?  $9+3=12$

Or

Define nitrogen fixation. Describe the biological methods of nitrogen fixation.  $2+10=12$

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24P—1600/886

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