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

**2023**

( May/June )

**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*

**1. Choose the correct answer of the following :**

1×5=5

- (a) In CAM plants, CO<sub>2</sub> uptake takes place mainly during daytime/night in dark/evening/noon.
- (b) Receptors are primary effectors/signal transducers/secondary messengers/ligands.

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( Turn Over )

- (c) The end product of gluconeogenesis is glucose/acetyl CoA/pyruvate/glycerol.
- (d) For producing nodules, the *nif* genes are present in which part of the bacteria?  
Ribosome/Bacterial genome/  
Plasmid/Mesosome
- (e) The conformational coupling theory was proposed by Peter Mitchell/Slater/Boyer *et al.*/Mahler and Cordes.

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

- (a) Isozymes
- (b) Accessory pigments
- (c) Cyanide-resistant respiration
- (d) Photolysis of water
- (e) IAA

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

- (a)  $\beta$ -oxidation of fatty acids
- (b) Biological nitrogen fixation
- (c) Allosteric inhibition
- (d) Nitric oxide signalling in plants

( 3 )

4. What is photophosphorylation? Give an account of cyclic and non-cyclic electron transports in photosynthesis.  $2+(5+5)=12$

*Or*

What is  $C_2$  cycle? Summarize the various steps involved in the process and mention its significance.  $2+(8+2)=12$

5. Describe the citric acid cycle in plants. Explain how ATP molecules are generated in plants.  $9+3=12$

*Or*

What is glyoxylate cycle? Where does this cycle occur and how is the accumulation of sugars in fatty seeds accomplished through this cycle?  $2+10=12$

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