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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, CO₂ uptake takes place mainly during daytime/night in dark/evening/noon.
- (b) Receptors are primary effectors/signal transducers/secondary messengers/ligands.

(2)

- (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 : $4 \times 3 = 12$
- (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 : $6 \times 2 = 12$
- (a) β -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? $2+10=12$
