TDC (CBCS) Even Semester Exam.,
September—2021

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

SECTION—A

Answer any *ten* of the following questions : 2×10=20

1. Define metabolism.

2. Give an example of isozyme.

3. What is covalent modulation?

4. Define metabolic regulation.

5. Name two C_4 plants.

6. What is photorespiration?

7. Name two accessory pigments for photo-synthesis.

8. What are the two photochemical reaction centers?

9. Which enzyme catalyzes glucose to yield Glucose-6-phosphate?

10. The free energy released during glycolysis is conserved in which forms?

11. Define glycolysis.

12. Give an example of a naplerotic reaction.

13. Who proposed the chemiosmotic model for ATP synthesis?

14. Name an enzyme that catalyzes the formation of ATP.

15. What is the full form of EMP pathway?

16. Give an example of secondary messenger.

17. Define lipid.

18. Name two nitrogen-fixing bacteria.

19. Name the pigment involved in biological nitrogen fixation.

20. Name two naturally occurring fatty acids.

SECTION—B

Answer any *five* of the following questions : 6×5=30

21. Define anabolism and catabolism. Discuss the anabolic pathway with example. 2+4=6

22. Write notes on the following : 3+3=6

    (a) Allosteric enzyme

    (b) Covalently modulated enzyme

23. With the help of a flowchart, discuss CO_2 reduction. 6

24. Discuss in brief the role of photosynthetic pigments. 6

25. Mention two-phases of glycolysis. Discuss in brief the process of TCA cycle. 2+4=6

26. With a schematic representation, discuss the pentose phosphate pathway. 6

27. Write briefly on the following : 3+3=6

(a) Role of uncouplers

(b) ATP synthase

28. Briefly discuss the mechanism of ATP synthesis. 6

29. Discuss in brief nitrate reduction in plants. 6

30. Write short notes on the following : 3+3=6

(a) β-oxidation

(b) Gluconeogenesis

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