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K25U 2314

Reg. No. : .....

Name : .....

V Semester B.Sc. Degree (C.B.C.S.S. – O.B.E. – Regular/Supplementary/ Improvement) Examination, November 2025
(2019 to 2023 Admissions)
CORE COURSE IN BOTANY/PLANT SCIENCE
5B07BOT/PLS : Plant Physiology and Metabolism

Time : 3 Hours Max. Marks : 40

PART – A
(Objective Type Questions)

Answer **all** : **(4×1=4)**

1. Which is the first stable product of C_3 cycle ?
   a) Phosphoglyceric acid b) Oxalo acetic acid
   c) Pyruvic acid d) Glutamic acid
2. The type of lipids which primarily constitute cell membrane are :
   a) Waxes b) Phospholipids
   c) Glycolipids d) Triglycerides
3. Which plant hormone is known as the "stress hormone" ?
   a) Auxin b) Ethylene
   c) Abscisic acid d) Gibberellin
4. The site of glycolysis is
   a) Mitochondria b) Cell membrane
   c) Glyoxisome d) Cytoplasm

PART – B
(Short Essay Questions)

Answer **any eight** : **(8×2=16)**

5. Differentiate between Imbibition and Diffusion.
6. Explain the law of limiting factors.

P.T.O.

7. What are photosystems ?
8. Give an account of monosaccharides with examples.
9. Write a note on phytochrome.
10. What is the role of photosynthetic pigments in photosynthesis ?
11. What is vernalization ? What is the significance of vernalization ?
12. Give an account of ascent of sap.
13. Compare coenzymes and ribozymes with respect to their structure and function.
14. Give the expansions of RUBISCO and PEP Case.
15. Enumerate the physiological effects of gibberellin in plants.
16. What is meant by facilitated diffusion ?

PART – C
(Essay Questions)

Answer **any four** : **(4×3=12)**

17. Describe the pathway of photorespiration and name the cell organelles involved.
18. Explain the structure and function of ATP.
19. Give a short note on the various movements exhibited by plants.
20. Give an account of biological functions of lipids.
21. What is hydroponics ? Discuss the main applications of the technique.
22. Describe the K^+ ion theory of stomatal movements.

PART – D
(Long Essay Questions)

Answer **any one** : **(1×8=8)**

23. With the help of a schematic diagram describe Calvin Cycle in detail.
24. Describe the mechanisms of mineral absorption in plants, distinguish between passive and active absorption.
25. Explain the classification and structure of proteins. Describe the functions of proteins.

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