

Mid-West University  
**Examinations Management Office**

Final Examinations-2080

Bachelor level/ B. Sc. /4<sup>th</sup> Semester

Time: 3 hours

**Subject: Physiology and Biochemistry (BOT341/441)**

Full Marks: 60

Pass Marks:30

*Candidates are required to give their answer in their own words as far as practicable. The figures in the margin indicate full marks.*

**Group – A**

Attempt **all** the questions. [4x8 = 32]

1. Why Calvin cycle is also called C<sub>3</sub> cycle? Describe the Calvin cycle in detail with flow chart. (1+5+2)
2. Justify “Transpiration is a necessary evil”. Emphasize on the major theories of opening and closing of stomata. Also mention the various factors that influence the rate of transpiration. (2+4+2)

**OR**

Give concise account of the mechanism of mineral salts absorption in higher plants.

3. What does EMP pathway stand for? Discuss the major steps of EMP pathway with flow chart. (1+5+2)
4. Write short notes on:
  - a. Vernalization
  - b. Photoperiodism

**Group – B**

Attempt **all** the questions in brief. [7x3 = 21]

5. Discuss about active osmotic absorption of water.
6. Give explanatory notes on enzyme.
7. Explain the role of gibberellic acid on seed germination.
8. Define biomolecules. Write down the categories and importance of carbohydrates. (1+1+1)
9. Briefly discuss about the photorespiration.
10. Discuss the application of laws of thermodynamics in biological process.

**OR**

Differentiate between cyclic and non - cyclic photophosphorylation.

11. What do you mean by tissue culture? Write down the significances of tissue culture. (1+2)

**Group – C**

Attempt **any seven** questions in very short. [7x1 = 7]

12. Define entropy.
13. List out any two physiological effects of auxin.
14. Define entropy.
15. What do you mean by ETS?
16. What are the limiting factors of photosynthesis? Give your concept.
17. What is “Krantz anatomy”?
18. Write down the deficiency symptoms of phosphorous in plants.
19. Elaborate about phytochrome.
20. Differentiate between wall pressure and turgor pressure.

**The End**