PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2023
(Second Semester)

Branch – BOTANY

PLANT PHYSIOLOGY AND BIOCHEMISTRY

Time: Three Hours   Maximum: 50 Marks

SECTION-A (5 Marks)
Answer ALL questions
ALL questions carry EQUAL marks   (5 x 1 = 5)

1. Phytochrome is a photosensitive pigment involved in _____.
   (i) Geotropism   (ii) Phototropism
   (iii) Photoperiodism   (iv) Photorespiration

2. Photosynthesis occurs in
   (i) Chloroplast   (ii) Vacuole
   (iii) Nucleus   (iv) Golgi apparatus

3. Glycolysis is also known as
   (i) EMP Pathway   (ii) TCA Pathway
   (iii) Carbon sequestration   (iv) Hatch & Slack Pathway

4. Which of the following is the simplest form of carbohydrates?
   (i) Aldehyde and ketone groups   (ii) Carboxyl groups
   (iii) Alcohol groups   (iv) All the above

5. Nature of enzyme is a
   (i) Protein   (ii) Vitamin   (iii) Carbohydrate   (iv) Lipid

SECTION - B (15 Marks)
Answer ALL Questions
ALL Questions Carry EQUAL Marks   (5 x 3 = 15)

6. a. Evaluate the process of diffusion and osmosis.
                        OR
    b. State the nastic movements.

7. a. Discuss about Calvin cycle.
                        OR
    b. Explain the factors affecting photosynthesis.

8. a. Illustrate the process of Oxidative phosphorylation.
                        OR
    b. Sketch the TCA cycle.

9. a. Explain the redox reaction.
                        OR
    b. Evaluate the functions of carbohydrates.

10. a. Justify the role of coenzymes.
                        OR
    b. Prepare a list of general properties of enzymes.

SECTION -C (30 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** Marks $(5 \times 6 = 30)$

11.   a.   Elucidate the phenomenon of circadian rhythm.
OR
      b.   Analyze about vernalization.

12.   a.   Construct the Hatch and Slack pathway.
OR
      b.   Describe cyclic and non cyclic photophosphorylation.

13.   a.   Explain about stress physiology.
OR
      b.   Write an essay on respiratory quotient with example.

14.   a.   Enumerate on the importance of chemical bonding in biological system.
OR
      b.   Survey the importance of bioenergetics.

15.   a.   Determine the major classes of enzymes.
OR
      b.   Design the method of purification of enzymes.

Z-Z-Z   END