PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2025
(Sixth Semester)

Branch – **BOTANY**

PLANT METABOLISM

Time: Three Hours Maximum: 50 Marks

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

1 Substances which reduce the rate of enzyme catalyzed reactions are known as _____.
(i) substrates (ii) enzymes
(iii) products (iv) inhibitors

2 What are the examples of fluorescent compounds?
(i) Sugar, vitamin (ii) Proteins, nucleic acid
(iii) Protein, sugar (iv) Minerals, nucleic acid

3 Who discovered C3 cycle?
(i) Rudolph Markus (ii) Robert Brown
(iii) Kolliker (iv) Melvin Calvin

4 Glycolysis is also known as _____.
(i) EMP pathway (ii) TCA pathway
(iii) carbon sequestration (iv) None of the above

5 Conversion of nitrogen to ammonia or nitrogenous compounds is termed as _____.
(i) Nitrogen fixation (ii) Nitrification
(iii) Denitrification (iv) Nitrogen assimilation

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

6 a Give an outline about the classification of enzymes.
OR
b What is competitive and noncompetitive inhibition?

7 a Describe about the Hills reaction.
OR
b Identify the types of Photosynthetic pigments.

8 a Briefly explain about the cyclic photophosphorylation.
OR
b Point out the factors affecting photosynthesis.

9 a Bring out the factors affecting respiration.
OR
b Narrate the anaerobic respiration in plants.

10 a How to get nitrogen to plants naturally?
OR
b Examine the steps of beta-oxidation of fatty acids.

Cont...

SECTION -C (30 Marks)

Answer **ALL** questions
ALL questions carry **EQUAL** Marks (5 x 6 = 30)

11 a Discuss in detail about laws of thermodynamics.

OR

b Summarize the Lock and Key model of enzyme actions.

12 a Explain briefly about components of photosystem I and II.

OR

b Discover the electromagnetic nature of light.

13 a Elucidate the CAM pathway.

OR

b Describe about the Calvin cycle.

14 a Outline the steps of the glycolytic pathway.

OR

b Briefly discuss about the Kreb's cycle.

15 a Examine the mechanism of nitrogen fixation in root nodules.

OR

b High light the steps involved in amino acid synthesis.

Z-Z-Z END