

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2024  
(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. Who coined the term enzyme?  
(i) F.W. Kuhne (ii) Louis Pasteur  
(iii) Traube (iv) Willstatter
2. Choose which one of the following is related to photosynthesis  
(i) Catabolic process (ii) anabolic process  
(iii) amphibolic process (iv) None of these
3. Where is ATP synthases found?  
(i) lumen of thylakoids (ii) stroma of thylakoids  
(iii) other members of thylakoids (iv) Grana of thylakoids
4. Which of following is common in both aerobic and anaerobic respiration?  
(i) Glycolysis (ii) Krebs cycle  
(iii) Alcoholic fermentation (iv) Lactic acid fermentation
5. Which of the following organelle B-oxidation of fatty acids takes place?  
(i) Mitochondria (ii) glyoxysomes  
(iii) mitochondria and glyoxysomes (iv) cytosol

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 3 = 15)

- 6 a. Explain Lock and Key model with suitable diagram.  
(OR)  
b. Analyze the method of Enzyme reaction.
- 7 a. State the Red Drop and Emerson's Enhancement effect.  
(OR)  
b. Explain about the Hill's reaction.
- 8 a. Summarize the non-cyclic photophosphorylation.  
(OR)  
b. Compare the C3 and C4 pathway.
- 9 a. Examine the structure of the ATP and its significance.  
(OR)  
b. Describe the factors affecting respiration.
- 10 a. Outline the sources of Nitrogen to plants.  
(OR)  
b. Examine about the Reduction of nitrates in plant tissues.

Cont...

**SECTION -C (30 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a. Recall the induced fit theory.  
(OR)  
b. Examine about the Enzyme inhibition.
- 12 a. Differentiate the Fluorescence and phosphorescence.  
(OR)  
b. Analyze the role of photosynthetic pigments.
- 13 a. Categorize the steps involved in Calvin cycle.  
(OR)  
b. Summarize the Hatch and slack pathway.
- 14 a. Elaborate account on the steps involved in mechanism of Glycolytic pathway.  
(OR)  
b. Discuss about the Krebs cycle and its link metabolism.
- 15 a. Elucidate the Nitrogen fixation in root nodules with suitable diagram.  
(OR)  
b. Discuss the various steps involved in process of B-oxidation.

Z-Z-Z      END