

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2024
(Sixth Semester)

Branch – **BIOCHEMISTRY**

PLANT BIOCHEMISTRY

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks (5 x 1 = 5)

- 1 Photosynthetic pigments are located in
(i) stroma (ii) grana (iii) cytoplasm (iv) thylakoids
- 2 What is the special leaf anatomy in C4 plants known as?
(i) Mesophyll anatomy (ii) Vascular anatomy
(iii) Kranz anatomy (iv) Calvin anatomy
- 3 Plants absorb nitrogen from the soil which is in the form of ?
(i) Nitrates (ii) Nitric acid
(iii) Nitrogen oxide (iv) Free nitrogen gas
- 4 The precursor of Indole-3-acetic acid is
(i) Methionine (ii) Tryptophan
(iii) Isopentenyl pyrophosphate (iv) Glycine
- 5 Phytochrome is a photosensitive pigment involved in
(i) geotropism (ii) phototropism
(iii) photorespiration (iv) photoperiodism

SECTION - B (15 Marks)

Answer **ALL** Questions

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

- 6 a Explain the photosynthetic apparatus.
OR
b Illustrate the structure and functions of carotenoids.
- 7 a Differentiate CAM plants from C4 plants.
OR
b Analyse the functions of photorespiration.
- 8 a What is the importance of sulphur in plants? Name the amino acids that contain it.
OR
b Summarize the non-symbiotic nitrogen fixation.
- 9 a Outline the action of Ethylene in plant growth.
OR
b Discuss the functions of cytokinin.
- 10 a Summarize the causes of seed dormancy.
OR
b Comment on Senescence.

Cont...

SECTION -C (30 Marks)

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

11 a Elucidate the Z- scheme pathway, highlighting the changes in redox potential and the direction of electron flow.

OR

b Summarize the cyclic-photophosphorylation.

12 a With the help of the suitable diagram, elucidate the stoichiometry of the Calvin Cycle.

OR

b Discuss the Structure and function of Kranz anatomy.

13 a Enumerate the N₂ cycle that occurs in plants.

OR

b Analyse the role of sulphur, its source, and assimilation in higher plants.

14 a Interpret the action of gibberellins in plant growth.

OR

b Illustrate the biosynthesis of auxin.

15 a Discover the biochemistry behind fruit ripening.

OR

b Outline the importance of photomorphogenesis.

Z-Z-Z

END