

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2019
(Second Semester)

Branch - **BIOCHEMISTRY**

ADVANCED PLANT BIOCHEMISTRY

Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks!)

Answer **ALL** questions

ALL questions carry **EQUAL** marks (10x1 = 10)

- 1 Which of the following pigments contains open pyrrole ring?
(i) Phycobilins (ii) Xanthophylls
(iii) Chlorophylls (iv) p-carotene
 - 2 Hill reaction occurs in
(i) Absence of water (ii) Total darkness
(iii) High light (iv) Presence of ferricyanide
 - 3 Which plant hormone is helpful in making RNA and protein?
(i) Gibberellins (ii) Auxin
(iii) Cytokinins (iv) Ethylene
 - 4 Name the phenolic compound present in tea?
(i) Flavonoids (ii) Lignans
(iii) Stilbene (iv) Neolignans
 - 5 In anabaena, N₂ fixer is present in root pockets of
(i) Marselia (ii) Salvinia
(iii) Pistia (iv) Azolla
 - 6 Nif gene' for nitrogen fixation I cereal crops like wheat, jowar, etc., is introduced by cloning
(i) Rhizobium meliloti (ii) Bacillus thuringiensis
(iii) Rhizopus (iv) Rhizophora
 - 7 Which disease of plant is known as ring disease?
(i) Citrus Canker (ii) Black arm of cotton
(iii) Wilt of potato (iv) Red spot disease
 - 8 In which disease of plant white mildew appears typically on underside of leaves?
(i) Cylindrocladium (ii) Angular leaf spot
(iii) Downy Mildew (iv) Black arm of cotton
 - 9 Which of the following is the liquid inside the chloroplast?
(i) Outer membrane (ii) Inner membrane
(iii) Stoma (iv) Thylakoids
- Chloroplast was discovered by
(i) Julius Van Sachs (ii) Robert brown
(iii) Pasty Row (iv) Julius John

Cont...

SECTION - B (35 Marks)

Answer **ALL** Questions

ALL Questions Carry **EQUAL** Marks (5 x 7 = 35)

- 11 a What are Photosynthetic pigments? Explain.
OR
b Illustrate the factors affecting transpiration.
- 12 a Describe the structure, properties and functions abscissic acid.
OR
b What are Elicitor molecules? Describe with an example.
- 13 a Exemplify the role of nitrogenase in nitrogen fixation.
OR
b Explain the GOGAT pathway for ammonia assimilation.
- 14 a What are R gene and R gene mediated disease resistance?
OR
b Write a note on plant defensive mechanism.
- 15 a Discuss the structure of chloroplast with its functions.
OR
b Explain the structure and composition of plant mitochondrial membrane.

SECTION - C (30 Marks)

Answer any **THREE** Questions

ALL Questions Carry **EQUAL** Marks (3 x 10 = 30)

- 16 Elaborate on the C₃ pathways of carbon in photosynthesis with its significance and regulation.
- 17 Describe the structure, properties and biological functions of auxins.
- 18 Write a detailed note on mechanism of symbiotic nitrogen fixation.
- 19 Illustrate the effects of pathogens on plant physiological functions.
- 20 Explain the transport of proteins into chloroplast and mitochondria.

Z-Z-Z

END