

B. Sc. DEGREE EXAMINATION, APRIL 2022
BRANCH V (a) – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY
SIXTH SEMESTER

COURSE : MAJOR – CORE

PAPER : PLANT PHYSIOLOGY

TIME : 3 HOURS

MAX. MARKS: 100

SECTION A

Answer all the questions.

(18 MARKS)

I. Choose the correct answer:

(5 x 1 = 5)

- The pigment involved in Photoperiodism is
(a) Phytochrome (b) Cytochrome (c) Carotene (d) Xanthophyll
- When a cell is placed in hypertonic medium it becomes
(a) Swollen (b) Rigid (c) Flaccid (d) Turgid
- Root pressure is developed in
(a) Phloem (b) Xylem (c) Cortex (d) Cambium
- The process of conversion of Nitrite to Ammonia is
(a) Ammonification (b) Denitrification
(c) Nitrification (d) Nitrogen fixation
- Avena curvature test bioassay was developed by
(a) Boysen-Jensen (b) Skoog (c) Thimann (d) Went

II. Fill in the blanks:

(5 x 1 = 5)

- The Respiratory Quotient of anaerobic respiration is _____.
- Stomata opens at night in _____ plants.
- An example of fruit ripening hormone is _____.
- Glycolysis occurs in the _____ of the cell.
- Plant that flowers when days are longer and nights are shortest are called _____.

III. State Whether True or False:

(3 x 1 = 3)

- Blue light has more energy.
- Respiration is an anabolic process.
- Dark reaction takes place in stroma.

IV. Match the following :

(5 x 1 = 5)

- Kranz anatomy - Microorganisms
- Soybean - Apical dominance
- DCMU - C₃ plant
- Entner-Doudoroff Pathway - Herbicide
- Auxin - C₄ plant

V. Answer any SIX of the following. Each answer should not exceed 50 words:

(6 x 3 = 18)

19. Differentiate Fluorescence and Phosphorescence
20. Significance of Osmosis
21. Respiratory Quotient
22. Differentiate C₃ and C₄ cycles
23. Phloem loading
24. Chlorosis
25. Florigen
26. Cyanide Resistant Respiration
27. Vernalization

SECTION – B

Answer any FOUR of the following. Each answers not exceeding 200 words. (4 x 6 = 24)

28. Discuss the various external and internal factors affecting Photosynthesis.
29. Illustrate Hatch and Slack pathway.
30. Explain the role of ABA in Stomatal opening and closure.
31. Elucidate the components of water potential.
32. How Nitrogen is assimilated in plants?
33. Tabulate the roles and deficiency of micronutrients.

SECTION – C

Answer any TWO of the following. Each answers not exceeding 1000 words.

(2 x 20 = 40)

34. Discuss the mechanism of aerobic respiration in plants and explain how ATP is generated.
35. Substantiate the process of Photophosphorylation
36. Discuss the mechanism of Stomata Transpiration in Plants.
37. Describe the practical applications of various Plant Growth Regulators.
