STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086
(For candidates admitted during the academic year 2008 - 09)

SUBJECT CODE: BT/MC/PP64

B. Sc. DEGREE EXAMINATION, APRIL 2011
BRANCH V (a) – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY
SIXTH SEMESTER

COURSE : MAJOR – CORE
PAPER : PLANT PHYSIOLOGY
TIME : 3 HOURS **MAX. MARKS: 100**

SECTION A

I. Answer all the questions. **(18 MARKS)**

Choose the correct answer **(5 MARKS)**

1. In C_4 plants C_3 cycle takes place in
   a. Mesophyll. b. Vascular bundle, c. Bundle sheath, d. Epidermis.
2. Stomatal closing is induced by,
   a. CO_2, b. O_2, c. N_2, d. NH_3.
3. The plant growth regulator that is generally considered as rooting hormone is
   a. Kinetin, b. Ethrel, c. Morphactin, d. Indole -3-Butyric acid.
4. Osmotic pressure in a turgid cell is equal to
   a. Turgour pressure b. DPD c. suction pressure d. Diffusion pressure
5. _____ is an example for inducible enzyme.
   a. Nitrogenase, b. Malic dehydrogenase, c. Nitrate reductase, d. Nitrite reductase.

II. Fill in the blanks: **(5 MARKS)**

6. Chemically Gibberellic acid is a _____.
7. _____ is used as a selective weedicide.
8. The key enzyme in C_3 cycle is _____.
9. The pigment _____ is present in the root nodule.
10. _____ induces multiple shoot production in tissue culture.

III. State True or False: **(4 MARKS)**

11. Abscisic acid induces stomatal opening.
12. Substrate level phosphorylation takes place in the cytoplasm.
13. C_4 plants have very high CO_2 compensation point.
14. Lettuce seed germination is promoted by cytokinin.

III. Match the following: **(4 MARKS)**

15. Radial micellation	Ethylene
16. Coleoptile	C_3 plant
17. Kranz anatomy	Stomata
18. Epinasty	C_4 plant
	Auxin

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

(6 X 3 = 18 MARKS)

19. Climacteric rise.
20. CAM plants.
21. Ammonia assimilation.
22. PEP carboxylase.
23. Bioassay.
24. Gravitropism.
25. Growth curve.
26. Phloem loading.
27. Abscission.

SECTION – B

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

28. Define water potential, osmotic potential and pressure potential and bring out their relationships.
29. Explain how K^+ ions regulate the opening and closing of stomata.
30. Write notes on the enzyme nitrogenase.
31. Schematically represent the photorespiration, explain the important steps and the significance of photorespiration.
32. Explain any one passive and any one active concept of mineral salt absorption.
33. Describe any six physiological roles of gibberellins.

SECTION – C

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

(2 x 20 = 40 MARKS)

34. Write an essay on physiology of flowering.
35. Schematically represent the light reaction and explain it in detail. Discuss the location of various components of light reaction in the chloroplast and the importance of light reaction.
36. Explain the oxidation of glucose molecule by aerobic respiration.
37. Describe the function, deficiency symptoms and remedial measures of any four macro and any four micro nutrients.

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