



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – ZOOLOGY

THIRD SEMESTER – NOVEMBER 2023

PZO3ID01 – SYSTEM PHYSIOLOGY - PLANT

Date: 09-11-2023

Dept. No.

Max. : 100 Marks

Time: 01:00 PM - 04:00 PM

SECTION A – K1 (CO1)

Answer ALL the questions

(5 x 1 = 5)

1 Definitions

- a) Photosynthesis.
- b) Macronutrients.
- c) Apical meristems.
- d) Vascular cylinder.
- e) Geotropism.

SECTION A – K2 (CO1)

Answer ALL the questions

(5 x 1 = 5)

2 Fill in the blanks

- a) RuBisCO stands for-----
- b) The mineral is required for photolysis of water during photosynthesis -----.
- c) During the process of-----, the microspore divides mitotically to form the vegetative and generative cells.
- d) In social amoeba, the cells aggregate chemotactically to form a multicellular structure is called -----
- e) ----- is a fruit ripening hormone.

SECTION B – K3 (CO2)

Answer any THREE of the following

(3 x 10 = 30)

- 3 Explain transpiration and list out the factors influencing it.
- 4 Illustrate Citric acid cycle with suitable diagram.
- 5 Illustrate the features of epigeal and hypogeal germination.
- 6 Analyse the role of meristematic tissue in plant growth and development.
- 7 Explain the External coincidence model of flowering in *Arabidopsis thaliana*.

SECTION C – K4 (CO3)

Answer any TWO of the following

(2 x 12.5 = 25)

- 8 Compare C3, C4 Plants photosynthesis with suitable examples.
- 9 Explain structure of Mitochondria and ATP synthesis mechanism.
- 10 Infer the importance of megasporogenesis and megagametogenesis in plant development.
- 11 Classify and explain the types, function and formation of root system.

