LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



M.Sc. DEGREE EXAMINATION - ZOOLOGY

THIRD SEMESTER – **NOVEMBER 2023**

PZO3ID01 - SYSTEM PHYSIOLOGY - PLANT

	Date: 09-11-2023
	SECTION A – K1 (CO1)
	Answer ALL the questions $(5 \times 1 = 5)$
1	Definitions
a)	Photosynthesis.
b)	Macronutrients.
c)	Apical meristems.
d)	Vascular cylinder.
e)	Geotropism.
	SECTION A – K2 (CO1)
	Answer ALL the questions $(5 \times 1 = 5)$
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 $(3 \times 10 = 30)$
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.

SECTION D – K5 (CO4)		
	Answer any ONE of the following $(1 \times 15 = 15)$	
12	Explain Nitrogen cycle and various methods of nitrogen fixation in plants.	
13	Summarize the steps in plant embryogenesis.	
SECTION E – K6 (CO5)		
	Answer any ONE of the following $(1 \times 20 = 20)$	
14	Elaborate the steps involved in the process of cell aggregation and differentiation in <i>Dictyostelium</i> .	
15	"Secondary metabolites play a major role in the growth and survival of plants." – Justify.	

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