LOYOLA COLLEGE (AUTONOMOUS) CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – **PLANT BIOLOGY AND PLANT BIOTECHNOLOGY**

FIRST SEMESTER – **NOVEMBER 2024**

UPB1MC01 – CELL BIOLOGY AND EVOLUTION

Date: 09-11-2024 Dept. No. Max. : 100 Marks

Time: 09:00 am-12:00 pm

Q.No	Levels	Answer the following, each in about 50 words (10 x 2 = 20 marks)
SECTION A - K1 & K2 (CO1)		
1	K1	What is the difference between objective lens and ocular lens.
2		Describe the structure of Plasma membrane.
3		Distinguish between euchromatin and heterochromatin.
4		Define Telomere.
5		Concept of mutation theory.
6	K2	What is meant by condenser?
7		Illustrate the structure of Golgi apparatus.
8		What is Karyotype and Idiogram?
9		Distinguish between open and closed mitosis.
10		List the mechanisms of postzygotic reproductive barrier.
SECTION B – K3 & K4 (CO2)		
		Answer the following in 500 words (4 x 10 = 40 marks) **Draw diagrams / flowcharts wherever necessary**
11	K3	Give the ray diagram of Phase contrast microscopy. Mention the working principle and its applications.
		[OR]
12		Write notes on endoplasmic reticulum, types and its function.
13		Discuss the dynamic organization of cell Nucleus.
		[OR]
14		Define Histones. Classify the types and specify the significance of Histone modification.
15	K4	Analyse the importance of special chromosomes.
		[OR]
16		Interpret the major stages in cell cycle.
17		Explain the stages of Prophase I of meiosis.
		[OR]
18		Compare and contrast Lamarck's and Darwinian concept of evolution.
SECTION C – K5 & K6 (CO3)		
		Answer the following in 1000 words (2 x 20 = 40 marks) **Draw diagrams / flowcharts wherever necessary**
19	K5	Describe the working mechanism of TEM. Add a note on its applications.
		[OR]
20		Elucidate the ultrastructure and functions of Chloroplast.
21	K6	Elaborate the molecular organisation of chromosomes pertaining to the bead on string model.
		[OR]
22		Discuss the concept of speciation and types of isolating mechanisms.

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