LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



M.Sc. DEGREE EXAMINATION - BIOTECHNOLOGY

THIRD SEMESTER - **NOVEMBER 2023**

PBT3MC01 - PLANT BIOTECHNOLOGY

SECTION A – KI (COI) Answer ALL the questions (5 x 1 = 5) Choose the best option a) Which scientist developed haploid plants from anther lobes? a) Johani and Maheshwari b) Murashige and Skoog c) White and Haberlandt d) Guha and Maheshwari b) What can be done to prevent cross breeding of GM crops? a) GURT c) CRISPR d) STS CRISPR d) STS c) Recall the bacterial transformation technique where a cloning vector has two antibiotic resistant genes for ampicillin and tetracycline and a foreign gene was inserted into the plasmid containing tetracycline resistant gene. Select the antibiotics on which the non-recombinants would survive. a) Ampicillin and tetracycline b) Tetracycline but not ampicillin c) Ampicillin but not tetracycline b) Tetracycline but not ampicillin c) Ampicillin but not tetracycline b) G2 phase c) S phase c) S phase d) M phase e) The secretariat of convention on biodiversity is based in a) Montreal, Canada b) Rio De Janciro, Brazil c) Geneva, Switzerland d) New York, United States SECTION A – K2 (COI) Answer ALL the questions Z Answer in one or two sentences a) Mention any two hormones used for multiple shoot production. b) Name the scientist who discovered golden rice. d) How are flood resistant crops developed? d) Which phytochemical test is used to confirm saponins? What is biological hotspot? SECTION B – K3 (CO2) Answer any THREE of the following 3 Outline the steps involved in protoplast isolation. SECTION C – K4 (CO3) Answer any THO of the following C) Give brief notes on Nagoya protocol. SECTION C – K4 (CO3) Answer any TWO of the following.		Date: 30-10-2023 Dept. No. Max. : 100 Mark	
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7 Give brief notes on Nagoya protocol. SECTION C – K4 (CO3) Answer any TWO of the following (2 x 12.5 = 25)	6	Discuss the pathway involved in production of alkaloids.	
SECTION C – K4 (CO3) Answer any TWO of the following (2 x 12.5 = 25)	7		
Answer any TWO of the following $(2 \times 12.5 = 25)$			
8 Analyze the biosynthetic pathway of cytokinins.			
, , , , , , , , , , , , , , , , , , ,	8	Analyze the biosynthetic pathway of cytokinins.	

9	Differentiate GURT and TILLING.	
10	a) Explain the role of selectable markers and reporter genes.	
	b) Write short notes on algal neutraceuticals.	
11	Explain the importance of plant genetic resources.	
SECTION D – K5 (CO4)		
	Answer any ONE of the following	$(1 \times 15 = 15)$
12	Justify the statement that viral resistant plants are obtained by meristem culture.	
13	Give a detailed account on SAAT method.	
SECTION E – K6 (CO5)		
	Answer any ONE of the following	$(1 \times 20 = 20)$
14	Elaborate on floral dip transformation technique.	
15	Summarize the phytochemical compounds present in plants.	

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