

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION MO/2023)

CLASS: BTECH
BRANCH: BIOTECHNOLOGY

SEMESTER : VII
SESSION : MO/2023

SUBJECT: BE403 PLANT & AGRICULTURAL BIOTECHNOLOGY
TIME: 02 HOURS

FULL MARKS: 25

INSTRUCTIONS:

1. The question paper contains 5 questions each of 5 marks and total 25 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates
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		CO	BL
Q.1(a)	Design a plant tissue culture laboratory.	[2]	1 6
Q.1(b)	Describe the protocol for seed sterilization, including figure.	[3]	1,2 3
Q.2(a)	Correlate the various aspects of commercial Micropropagation. Also mention a few limitations.	[2]	4 4
Q.2(b)	Plan your strategy for plant secondary metabolite production in cell suspension culture. List any two methods for upscaling the production.	[3]	6 6
Q.3(a)	Compare <i>in situ</i> and <i>ex situ</i> mode of conservation. How do you check the cell viability?	[2]	2 4
Q.3(b)	Apply your knowledge for cryopreservation of shoot tip culture.	[3]	2,3 3
Q.4(a)	Compare organogenesis with somatic embryogenesis. Which is the rapid method of Micropropagation? Justify.	[2]	3,4 4
Q.4(b)	Analyse the difference between callus and somatic embryo.	[3]	5 4
Q.5(a)	Define cellular totipotency. Describe the term Vitrification.	[2]	2,3 1, 2
Q.5(b)	What is somaclonal Variation? Whether it is advantageous or not, justify.	[3]	3 5

:::21/09/2023 :::