

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(END SEMESTER EXAMINATION)**

**CLASS:** BTECH  
**BRANCH:** Biotechnology

**SEMESTER :** VI  
**SESSION :** SP/2024

**SUBJECT: BE403 PLANT & AGRICULTURAL BIOTECHNOLOGY**

**TIME:** 3 Hours

**FULL MARKS:** 50

**INSTRUCTIONS:**

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
  2. Attempt all questions.
  3. The missing data, if any, may be assumed suitably.
  4. Before attempting the question paper, be sure that you have got the correct question paper.
  5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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		CO	BL
Q.1(a)	List the different types of Plant tissue culture media. Can you use the natural resources as an alternative for plant tissue culture, if yes, justify.	[5] 1	1
Q.1(b)	Draw and discuss the varied stages of embryo development. Compare a shoot bud with an embryo.	[5] 2	4
Q.2(a)	In order to prepare the MS + IBA (2mg/l) 200 ml media, calculate the amount of IBA required if the given concentration of IBA is 0.2mg/ml.	[5] 4	5
Q.2(b)	A medicinal herb is on verge of extinction. Besides Micropropagation, discuss the strategy for its conservation.	[5] 3	2
Q.3(a)	List the methods for production of Cybrids, is this a organelle inheritance? Justify.	[5] 2	2
Q.3(b)	Discuss any one method for isolation and purification of protoplast?	[5] 1	2
Q.4(a)	Anther culture is to produce the haploid plants. Justify. Mention two uses of haploid production.	[5] 4	5
Q.4(b)	Analyse the limitations of conventional breeding. Connecting to this, With the help of diagram, explain the term "Embryo Rescue".	[5] 3	4
Q.5(a)	What do you understand by gene silencing? Explain with the help of diagram.	[5] 4	2
Q.5(b)	Diagrammatically compare Binary and Co-integrate Vector. Why <i>Agrobacterium</i> is called as a poor man's vector?	[5] 3	4

:25/04/2024 M: