



## **BRAINWARE UNIVERSITY**

**Term End Examination 2023-2024** Programme - B.Sc.(BT)-Hons-2021 Course Name - Plant Biotechnology **Course Code - BBTD601B** (Semester VI)

Time: 2:30 Hours Full Marks: 60

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

## Group-A

15

		Gloup A	
1.	•	ultiple Choice Type Question) om the following:	1 x 15=3
(	i) Name the growth of plant tissue:	s in artificial media	
(i	<ul><li>a) Gene expression</li><li>c) Plant tissue culture</li><li>i) Name the term given to the ability differentiated cell in the organism</li></ul>	b) Transgenesis d) Cell hybridization ty of single cells to divide and produce all t n?	he
(ii	<ul><li>a) Unipotent</li><li>c) Multipotent</li><li>i) Interpret what is the term ORGAI</li></ul>	b) Pluripotent d) Totipotency NOGENESIS means in plant tissue culture	
(iv	<ul> <li>a) Formation of callus culture</li> <li>c) Formation of organ</li> <li>c) Cite the term given to the ability differentiated cell in the organism</li> </ul>	b) Micropropagation from d) None of these of single cells to divide and produce all the n?	
· (v)	<ul><li>a) Unipotent</li><li>c) Multipotent</li><li>Interpret the role of phosphatase</li></ul>	b) Pluripotent d) Totipotency enzymes in signal transduction?	
(vi)	<ul> <li>a) Activating other proteins</li> <li>c) Deactivating proteins by remove phosphate groups</li> <li>Determine what is meant by cryo</li> </ul>	b) Catalyzing phosphorylating d) Regulating calcium level preservation in the context of plant tissue	ls
(*.,	a) Preservation of plant cells at ult temperatures		
(vii)	c) Preservation of plant cells in a f	reezer d) Preservation of plant ce a potential challenge in using plant tissue	•
	a) High cost	b) Rapid multiplication of	plant species

d) Use of native soils

c) Lack of sterile conditions

(	viii) Identify the method not used in cryogenic diffe	rentiation			
	a) Slow freezing	b) Vitrification			
	<ul> <li>c) Rapid freezing</li> <li>(ix) Select correct description for organogenic difference</li> </ul>	d) Thawing rentiation			
	a) Development of Organs	b) Development of Tissues			
	c) Development of Cells into specific organ	۸۱			
	structures	None of these			
	(x) Name the technique used to induce organogen	c differentiation			
	a) Freezing	b) Thawing			
	c) Tissue culture	d) None of these			
(	<ul><li>xi) Select the technique involved in the culture of i conditions</li></ul>	mmature seeds under controlled			
	a) Seen culture	b) Callus culture			
	c) Embryo culture	d) Meristem culture			
(:	kii) Indicate a disadvantage of micropropagation				
	a) Rapid multiplication	b) High cost			
	c) Genetic diversity	d) Ease of automation .			
(>	iii) Determine the cell structure which when inhibit	ed results in double haploids			
	a) Microtubule	b) Cell membrane			
,	c) DNA	d) Cell wall			
()	iv) Determine the need for chromosome doubling				
	a) Increase the genetic diversity	b) Restore fertility			
1.	c) Enhance photosynthesis	d) Reduce disease susceptibility			
()	(v) Choose among the following the process of prof		G		
	a) Individual plant cells devoid of cell	b) Individual plant cells devoid of cell w	alls		
	membranes c) Individual plant cells				
	c) maividual plant cens	d) Individual plant cells devoid of nucle	us		
	Grou				
	(Short Answer Ty	pe Questions)	3 x 5=15		
2.	Explain the types of differentiation		(3)		
	3. Name some examples of symbiotic nitrogen-fixing relationships				
	4. Describe role of nitrogenase in nitrogen fixation				
4. Describe role of nitrogenase in nitrogen fixation  5. Examine how free-living bacteria aid in the production of plant growth hormones					
6.	6. Judge the significance of haploid plants in modern agriculture. Discuss the advantages and (3)				
	challenges associated with utilizing haploids, such	as monoploids and polyhaploids, in crop			
	improvement strategies.				
	OR  Determine the different methods of protoplast fusi		(2)		
	betermine the unreferre methods of protoplast fusi	Off:	(3)		
	Group	p-C			
	(Long Answer Ty		5 x 6=30		
	, ,	,	3 X 0-30		
7.	Explain the applications and advantages of plant t	issue culture?	(5)		
8.					
9.	9. Discuss about differentiation and de-differentiation.				
	Explain in detail production method of a cybrid.		(5) (5)		
	Design a method of creating double haploid plant		(5)		
12.	Evaluate the role of biocontrol agents in managen OR		(5)		
	Compare advantages and disadvantages of microp		(5)		
	and the second s				