
 University of Sadat City	Final Exam:	January	Course Code:	A38	Percentage		 GEBRI
	Academic Year:	2018/2019	Academic Program:	Msc	N. of Exam Paper	2	
	Level:	Msc	Department:	Plant biotechnology			
	Course Name:	Fundamentals of propagation and micropropagation	Total score:	60%	Time allowed:	3	

Instructions of Exam:

1. Answer the obligatory questions.
2. Use the blue pen and pencil in answer sheet
3. Allow one sheet answer for every student
4. Is not allowed to borrow the tools (pen, pencils, drawing tools, calculator ...etc)
5. Is not allowed to use the cell phone or any of its application during the time of exam

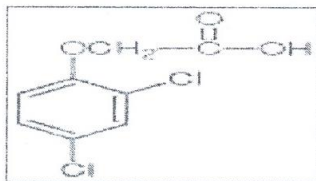
1st question:20 marks)

1-What is the correct sentences in the following

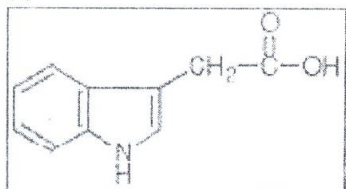
- a-Benzyl adenine is synthetic cytokinins ().
- b-Indole Acetic Acid is Natural Auxins ().
- c-Nitrogen, Phosphorus and Calcium are Minor Elements (-)
- d-Genetic Make Up is A Main Factor Affecting In Vitro Growth Of Plant Cell Culture()
- e-Sugars, Vitamin B (Thiamin , Pyridoxine and Nicotinic Acid)and Amino Acids are Organic Components Used in Plant Cell and Tissue Culture().

2-Explain in details:-Physical growth factors and nutrients are mainly factors affecting in vitro growth of plant cell and tissue culture.

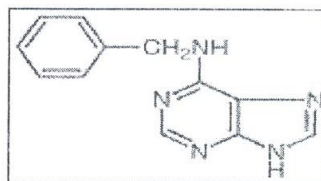
3-The following components are important in plant tissue culture,
What is the name of the component, its group and its function *in vitro*?



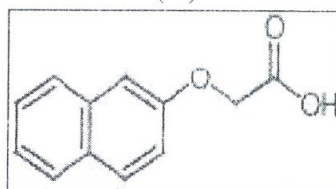
(I)



(III)



(II)



(IV)

2nd question:(20 marks)

1- Explain the following.....(10 marks)

- a- Types of vegetative propagation
- b - Factor effecting on germination seed and stages of germination

2- Describe why the place.(10 marks)

- a- Chimera
- b- Compatibility of grafting - Repair grafting
- d- Layering

3rd question:(20marks)

a-What are the benefits of micropropagation?(10marks)

b-Discuss in details the stages of micro propagation?(10marks)

4th - question:.....(20 marks)

a-Mention the factors affecting callus initiation.

b-Compare between the methods of micropropagation.

c-Explain the stages of indirect micropropagation.

With best wishes

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Staff Course	Prof. Ibrahim AbdElmaksoud, Prof. Ahmed Nower , Prof. Awatef BadrElden and Dr. Ibtesam Hamza	Department Head	Prof. Omaiama
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