

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA  
DEPARTMENT OF PLANT BIOLOGY  
SECOND SEMESTER BTECH. EXAMINATION, 2017/2018 SESSION

COURSE CODE: PLB 222  
COURSE TITLE: PLANT BIOTECHNOLOGY  
COURSE UNIT: 3  
TIME ALLOWED: 2 HOURS

INSTRUCTION: *ANSWER ANY TWO QUESTIONS FROM EACH SECTION*

SECTION A

1. a. In sequential order, explain the processes in development of a plant from a single cell.  
b. What theory support the process in "1a"? State the theory  
c. List four (4) factors that affect cyto-differentiation
2. a. Give a detailed explanation on the types of embryo culture.  
b. Highlight the sequential steps in media preparation  
c. State three (3) merits and demerits of liquid medium
3. Write note on the following:
  - a. Anther culture
  - b. Gametoclonal variation
  - c. Organogenesis
  - d. Ultra filtration sterilization
  - e. Steam sterilization

SECTION B

- 4 a. Enumerate the applications of tissue culture techniques.  
b. List 5 examples of plants that has been used to make edible vaccines.
- 5 a. Edible vaccines had come as an alternative to the conventional vaccines, explain.  
b. What is somaclonal variation?
6. With the aid of an annotated diagram only, describe the production of human interferon alpha 2b in *Nicotiana excelsior*.