

**BOWEN UNIVERSITY IWO**  
**COLLEGE OF AGRICULTURE, ENGINEERING AND SCIENCE**  
**PURE AND APPLIED BIOLOGY PROGRAMME**  
**2021/2022 FIRST SEMESTER EXAMINATION**  
**PAB 405: DEVELOPMENTAL BIOLOGY (THEORY)**

Instruction: Answer any three questions.

Time allowed: **2hs:30mins**

1. a). What is differentiation? *(5 marks)*  
b). Classify meristems based on stages of development *(16 marks)*  
c). Mention four importance of meristems culture *(4 marks)*
  
2. a). What are the roles of auxins in plant tissue culture? *(5 marks)*  
b.) Mention names of five auxins commonly used in plant cell cultures. *(10 marks)*  
c). Describe five biological effects of auxins in plants. *(10 marks)*
  
3. (a) Describe the hormone Ethylene and state seven physiological effects in plants *(10 marks)*  
  
(b) Give a succinct account of the formation of coelom *(15 marks)*
  
4. Define the following terms;  
i. Regeneration  
ii. Environmental Integration  
iii. Cleavage  
iv. Gastrulation  
v. Differentiation *(15 marks)*  
  
(b) Write a concise note on the four principles of Karl Ernst von Baer *(10 marks)*
  
5. Give a comprehensive discussion on the development of systems and organs in vertebrate *(25 Marks)*