

**BOWEN UNIVERSITY, IWO**  
**COLLEGE OF AGRICULTURE, ENGINEERING AND SCIENCE**  
**PURE AND APPLIED BIOLOGY PROGRAMME**  
**2022/2023 FIRST SEMESTER EXAMINATION**  
**PAB 405: DEVELOPMENTAL BIOLOGY (THEORY)**

*Instruction: Answer any three questions.*

*Time allowed: 2hrs:30mins*

1. Write a concise note on the following (with appropriate diagram):
  - (a) Primary meristems based on stages of development *(15 marks)*
  - (b) Meristems based on position in plants *(10 marks)*
  
2.
  - (a) What are the roles of auxins in plant tissue culture? *(5 marks)*
  - (b) State five biological effects of auxins in plants. *(10 marks)*
  - (c) List five synthetic auxins commonly used in plant cell cultures. *(10 marks)*
  
3.
  - (a) State five physiological effects of abscisic acid *(15 marks)*
  - (b) List the four principles of Karl Ernst von Baer *(10 marks)*
  
4. Briefly explain the following;
  - a) Epigenesis and Preformationism *(10 marks)*
  - b) Gastrulation *(5 marks)*
  - c) Cleavage *(5 marks)*
  - d) Differentiation *(5 marks)*
  
5. Discuss homology and analogy in developmental biology. *(25 marks)*