

**KABARAK**



**UNIVERSITY**

**UNIVERSITY EXAMINATIONS**

**2010/2011 ACADEMIC YEAR**

**FOR THE DEGREE OF BACHELOR OF EDUCATION SCIENCE**

**COURSE CODE: BOTA 310**

**COURSE TITLE: MORPHOGENESIS & DEVELOPMENTAL  
ANATOMY**

**STREAM: SESSION V**

**DAY: FRIDAY**

**TIME: 9.00 – 11.00 A.M**

**DATE: 15/04/2011**

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**INSTRUCTIONS:**

**ANSWER ALL QUESTIONS IN SECTION A AND ANY TWO IN SECTION B**

**PLEASE TURN OVER**

## SECTION A (40 MARKS)

1. Differentiate between the following terms;
  - a) Growth and development
  - b) Determinate and indeterminate plant structures
  - c) Monocarpic and polycarpic species
  - d) Staminate and pistillate
  - e) Adnation and connation
  - f) Pod and follicle
  - g) Monoecy and dioecy
  - h) Capel and pistil
  - i) Prokaryote and eukaryote
  - j) Actinomorphy and zygomorphy(15 marks)
  
2. (a) With the help of a labelled diagram show the modular construction of a shoot apex. (3 marks)  
(b) What is apical dominance? (1 mark)  
(c) What is the significance of apical dominance in plant? (1 mark)
  
3. (a) Use a diagram to illustrate the cells and nuclei in an embryo sac. (3 marks)  
(b) What do you understand by double fertilization? (1 mark)
  
4. (a) What is tissue culture? (1 mark)  
(b) Name two applications of tissue culture. (2 marks)  
(c) What is explants?
  
5. (a) What is the difference, in formation, between an aggregate and a multiple fruit. (2 marks)  
(b) Match the fruits in Column B with the type of fruits in column A.

<u>A</u>	<u>B</u>
i) Pome	Plums
ii) Hesperidium	Brijahs
iii) Pepo	Apples
iv) Berry	Tangerines
v) Drupe	Mulberry
vi) Aggregate	Squash.
  
6. Use diagrams to illustrate the following;
  - a) Paripinnate leaf
  - b) Trifoliolate leaf
  - c) Hypogynous flower
  - d) Corymb inflorescence(4 marks)

7. Explain the following statements
- a) The Mango tree is polygamous. (1 mark)
  - b) Xylem vessels in roots are exarch. (1 mark)
  - c) The flower of Canna Lily is asymmetrical. (1 mark)

**SECTION B (30 MARKS)**

8. Give an account of the morphological and anatomical differences between a monocot and a dicot stem. (15 marks)
9. Write an essay on endosperm. (15 marks)