

UNIVERSITY OF SWAZILAND

MAIN EXAMINATION PAPER 2014

TITLE OF PAPER : PLANT MORPHOLOGY

COURSE CODE: B202

TIME ALLOWED : THREE HOURS

INSTRUCTIONS :

1. Section A carries 40 marks and is COMPULSORY.
2. Choose any TWO questions from Section B, each of which carries 30 marks.
3. Remember to use appropriate terminology and illustrations

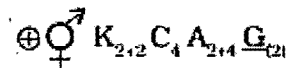
SPECIAL REQUIREMENTS: NONE

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INVIGILATORS

**SECTION A: COMPULSORY QUESTION**

**QUESTION 1**

- (a) Outline with the aid of a large clearly labelled diagram, the structure of an angiosperm embryo, stating the function of EACH part. (10 marks)
- (b) Describe, with the aid of an appropriate diagram, the morphological characteristics of a flower represented by the following formula: (10 marks)



- (c) State FOUR modifications of the androecium for wind pollination. (4 marks)
- (d) Explain with suitable examples and illustrations the different types of phyllotaxy. (12 marks)
- (e) Justify the following statements on the basis of plant morphology:  
-A flower is a modified shoot - (4 marks)
- (40 marks)**

**SECTION B: ANSWER ANY TWO QUESTIONS**

**QUESTION 2**

(a) Define the following terms:

- (i) aestivation
- (ii) placentation
- (iii) actinomorphic
- (iv) zygomorphic
- (v) superior ovary
- (vi) perigynous flower
- (vii) epipetalous stamen

(14 marks)

(b) Discuss the structural variations in gymnospermic needles (leaves) (16 marks)

(30 marks)

**QUESTION 3**

a) State FOUR differences between monocotyledonous and dicotyledonous plants.

(8 marks)

b) Describe TWO morphological differences between bulbs and corms. (4 marks)

(c) Briefly discuss how a seedcoat may limit germination. (8 marks)

(d) How do the various leaf modifications help plant growth and development?

(Total Marks 30)

**QUESTION 4**

With the aid of appropriate illustrations and examples with a focus on morphological characteristics, discuss the life cycle of gymnosperms. (30 marks)

**QUESTION 5**

- (a) Draw a fully labelled diagram of a corm. (8 marks)
- (b) Describe the annual life-cycle of a corm. (8 marks)
- (c) Describe, using NAMED plant examples, TWO other stem structures adapted for the storage of food. (8 marks)
- (d) How is a pinnately compound leaf different from a palmately compound leaf? (6 marks)

**(Total Marks 30)**