

UNIVERSITY OF ESWATINI

RESIT [SUPPLEMENTARY] EXAMINATION PAPER: 2018/2019

- COURSE CODE : BIO261 / BIO481
- TITLE OF PAPER : PLANT MORPHOLOGY
- TIME ALLOWED : THREE (3) HOURS
- INSTRUCTIONS :
1. ANSWER ANY **THREE** (3) QUESTIONS
 2. EACH QUESTION CARRIES 25 MARKS.
 3. ILLUSTRATE YOUR ANSWERS WITH LARGE AND CLEARLY LABELLED DIAGRAMS WHERE APPROPRIATE

SPECIAL REQUIREMENTS : NONE

THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION HAS BEEN GRANTED BY THE INVIGILATOR(S).

QUESTION 1.

Describe and compare using appropriate diagrams the leaf venation in dicotyledonous higher plants compared to monocotyledonous higher plants.

[25 Marks]

QUESTION 2.

Consider the following floral formula, then describe and illustrate the flower morphology.

[a]. $K_5 [C_{(5)} A_5] \underline{G}_{(5)}$

[13 Marks]

[b]. $K_6 C_{(6)} A_{3+3} \underline{G}_{(6)}$

[12 Marks]

[25 Marks]

QUESTION 3.

With reference to a typical dicotyledonous flower, explain what is meant by:-

- a compound gynoecium with a syncarpous pistil.
- a compound gynoecium with an apocarpous pistil.

[25 Marks]

QUESTION 4.

Describe using diagrams the morphology, highlighting the function of the following Gymnosperm female cones:-

a]. Pine cones [*Pinus* spp. strobili] [13 marks]b]. Cycad cones [*Cycas* spp] [12 marks]

[TOTAL 25 Marks]

QUESTION 5.

Discuss numerical phyllotaxy and explain the ranking and natural pattern development by using examples of relevant higher plant examples.

[25 Marks]

[TOTAL MARKS: 75]