

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER 2008/2009

COURSE CODE : B202

TITLE OF PAPER : PLANT MORPHOLOGY

TIME ALLOWED : THREE (3) HOURS

INSTRUCTIONS : 1. ANSWER ANY FOUR (4) 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 the possible functional morphological modifications in a tap root system.

[25 Marks]

QUESTION 2.

Describe and illustrate the morphology in the following fruits:-

[a]. Strawberry (*Fragaria* spp.). [9 Marks]

[b]. Figs (*Ficus* spp.). [8 Marks]

[c]. Blackberry (*Rubus* spp.). [8 Marks]

[Total 25 Marks]

QUESTION 3.

Give a comparative description of the female reproductive structures (strobilli) from the following Gymnosperms:-

[a]. *Pinus* spp. [9 Marks]

[b]. *Zamia* spp. [8 Marks]

[c]. *Cycas* spp. [8 Marks]

[Total 25 Marks]

QUESTION 4.

Some botanical observations on flowers may be summarised in floral formulae as given below. Describe and illustrate them.

[a]. $K_5 C_{(5)} A_{1+(9)} \underline{G}_{(5)} Z$ [9 Marks]

[b]. $K_{(5)} C_{(5)} A_{\infty} G_{(5)}$ [8 Marks]

[c]. $K_3 C_3 A_{15} G_{(6)}$ [8 Marks]

[Total 25 Marks]

QUESTION 5.

[a]. Explain how leaf and branch presentation may be ordered in Angiosperms.

[15 Marks]

[b]. Discuss the genetic spiral in relation to the leaf and branch presentation. [10 Marks]

[Total 25 Marks]

Dr. J. J. J.

QUESTION 6.

Seed development is preceded by pollination and fertilization.

[a]. Explain how the pollen develops.

[15 Marks]

[b]. Discuss pollination vectors noting the role of morphology in the process. [10 Marks]

[Total 25 Marks]

[TOTAL MARKS: 100]