



UNIVERSITY OF SWAZILAND
FINAL EXAMINATION PAPER

2ND SEMESTER 2013/2014

PROGRAMMES:

BSC. IN AGRICULTURAL & BIOSYSTEMS ENGINEERING YEAR 1
BSC. IN AGRICULTURAL ECONOMICS AND AGRIBUSINESS MANAGEMENT YEAR 1
BSC. IN AGRICULTURAL EDUCATION YEAR 1
BSC. IN AGRONOMY YEAR 1
BSC. IN ANIMAL SCIENCE YEAR 1
BSC. IN CONSUMER SCIENCE YEAR 1
BSC. IN CONSUMER SCIENCE EDUCATION YEAR 1
BSC. IN FOOD SCIENCE, NUTRITION & TECHNOLOGY YEAR 1
BSC. IN HORTICULTURE YEAR 1
BSC. IN TEXTILE AND APPAREL DESIGN & MANAGEMENT YEAR 1

COURSE CODE: CP102

TITLE OF PAPER: BOTANY

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER QUESTIONS ONE (1) AND ANY OTHER THREE (3) QUESTIONS.

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QUESTION 1 (THIS IS A COMPULSORY QUESTION)**A) MULTIPLE CHOICE QUESTIONS.**

For each question, choose the correct option which best answers that question. Read all choices before you choose.

1. Starting from the outside of a cell and moving towards the inside of a cell, which of the following components of a 'typical plant' cell are organized correctly?
 - A. plasma membrane => primary cell wall => secondary cell wall => middle lamella => cytoplasm
 - B. cytoplasm => plasma membrane => middle lamella => secondary cell wall => primary cell wall
 - C. plasma membrane => cytoplasm => secondary cell wall => primary cell wall => middle lamella
 - D. middle lamella => secondary cell wall => primary cell wall => plasma membrane => cytoplasm
 - E. middle lamella => primary cell wall => secondary cell wall => plasma membrane => cytoplasm

1 mark

2. Which of these cells are dead at functional maturity?
 - A. Tracheids
 - B. Companion cells
 - C. Root hairs
 - D. Parenchyma cells

2 marks

3. Which of the following is a living simple tissue involved as strengthening tissue for the plant body?
 - A. parenchyma
 - B. collenchyma
 - C. sclerenchyma
 - D. epidermis

2 marks

4. Which of the following cells are a conspicuous component of the hard shells of nuts and hard coverings of certain types of seeds? These also create the gritty texture associated with certain fruit (i.e., pears).
 - A. companion cell
 - B. parenchyma cell
 - C. sclereid
 - D. stone cell
 - E. Both C and D are correct choices

2 marks

5. Which of the following is a primary or transitional meristem?
 - A. root hair
 - B. ground meristem
 - C. collenchyma
 - D. intercalary meristem of grasses
 - E. vascular cambium

2 marks

6. The channels of protoplasm that exists through cell walls that connect one cell to another are called _____.
 - A. plasmodesmata
 - B. stomata
 - C. watsamata
 - D. cytoplasmic threads
 - E. None of the above choices are correct.

2 marks

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7. In Angiosperms the endosperm is
A. Haploid
B. Diploid
C. Triploid
D. None of the above
2 marks
8. Fertilization is process of
A. transfer of pollen from the anther to the stigma
B. Fusion of one male gamete with the egg
C. Formation of seed from ovule
D. Fusion of male nucleus of polar nuclei.
2 marks
9. In flowering plants meiosis occurs at the time of
A. Germination of seed
B. Formation of buds
C. Formation of root primordium
D. Formation of pollen grain
2 marks
10. Double fertilization is a characteristic of
A. Angiosperms
B. Gymnosperms
C. Monocots
D. Bryophytes
2 marks
11. Parallel venation are found in
A. Monocots
B. Dicot stem
C. Dicot root
D. None of these
2 marks
12. The quiescent centre in primary roots in found in the
A. Root cap
B. Zone of cell division
C. Zone of cell elongation
D. Zone of cell maturation
2 marks
13. The branch of Biology which is concerned with the inter-relationship between plants and animals is called:
A. Ecology
B. Morphology
C. Anatomy
D. Phytography
2 marks

25 MARKS

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QUESTION 2

In a tabular format compare and contrast the anatomical and morphological features of a monocotyledonous and a dicotyledonous plant.

25 MARKS

QUESTION 3

- a) Define the binomial nomenclature and outline its advantages in botanical studies. 9 marks
- b) Give a complete scientific classification of the following cultivated plants within the Plant Kingdom.
- i) Rice 8 marks
- ii) Groundnut 8 marks

25 MARKS

QUESTION 4

Give the botanical and the common names of any two (2) useful plants in the following plant families.

- a) Rosaceae subfamily Maloideae 5 marks
- b) Alliaceae 5 marks
- c) Solanaceae 5 marks
- d) Euphorbiaceae 5 marks
- e) Malvaceae 5 marks

25 MARKS

QUESTION 5

Write short notes on the following terms as related to the life cycle of angiosperms:

- A. Pollen grains 5 marks
- B. Embryo sac 5 marks
- C. Diploid zygote 5 marks
- D. Triploid endosperm 5 marks
- E. Development of seed and fruit 5 marks

25 MARKS