



**UNIVERSITY OF ESWATINI
MAIN EXAMINATION PAPER**

PROGRAMME: BACHELOR OF SCIENCE IN AGRONOMY YEAR 1

COURSE CODE: CPR102

TITLE OF PAPER: INTRODUCTION TO AGRONOMY

TIME ALLOWED: 2 HOURS

INSRCTIONS: ANSWER QUESTIONS 1 AND 2 [COMPULSORY] AND
ANY OTHER TWO [2] QUESTIONS OF YOUR
CHOICE

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QUESTION 1 [COMPULSORY QUESTION]

a) In a field trial maize and groundnuts were intercropped; the yields were as follows; maize monoculture: 3.0 t/ha; Groundnuts monoculture; 0.6 t/ha, the yield maize intercropped with groundnuts was 2.5 and 0.45 t/ha respectively.

i] Calculate the LER and interpret the results [6 marks]

ii] Discuss two disadvantages of intercropping [6 marks]

b). A farmer intends to grow sorghum in a 0.4 ha field.

i] After soil tests, he is advised to apply 1.5 t/ha of dolomitic limestone. How many 50kg bags should he purchase? [4 marks]

ii] The plant spacing is 80 cm by 15 cm with **two [2]** plants per station, calculate the number of plants in the farmer's field. [4 marks]

iii] The farmer intends to top-dress with 150 kg/ha of LAN using the placement/dollop method, how much should he apply per planting station. [4 marks]

iv] After harvesting the entire field, the farmer got 350 kg of sorghum. Calculate his grain yield at 12.5% moisture content expressing your answer in t/ha. [4 marks]

[28 marks]

QUESTION 2 [COMPULSORY QUESTION]

Write short notes on the following words or phrases, give examples where appropriate.

a) Vernalisation [4 marks]

b) Phytohormones [3 marks]

c) Seed health [3 marks]

d) Incomplete inorganic fertiliser [3 marks]

e) Luxury consumption [3 marks]

f) Straight fertiliser [3 marks]

g) Fertigation [3 marks]

[22 marks]

QUESTION 3

- a). Discuss the three pillars of Conservation Agriculture [12 marks]
 - b). List the three pillars of climate-smart Agriculture [6 marks]
 - c). How does seed dormancy promotes Agrobiodiversity. [4 marks]
- [22 marks]**

QUESTION 4

- a) Describe three (3) methods of determining seed moisture content [15 marks]
 - b) What is a seed viability test [2 marks]
 - c) Describe how the Excised embryo test is carried out when testing for seed viability [4 marks]
- [22 marks]**

QUESTION 5

- a) Describe a cropping system [2 marks]
 - b) Discuss any four cropping systems that can be practiced in Eswatini stating the merits and demerits of each system [20 marks]
- [22 marks]**