



2ND SEMESTER 2017/2018

PAGE 1 OF 3

UNIVERSITY OF SWAZILAND

MAIN EXAMINATION PAPER

PROGRAMME: BACHELOR OF SCIENCE IN AGRONOMY YEAR TWO

COURSE CODE: CPR 102

TITLE OF PAPER: INTRODUCTION TO AGRONOMY

TIME ALLOWED: TWO (2) HOURS

INSTRUCTION: ANSWER ALL QUESTIONS

**DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN GRANTED
BY THE CHIEF INVIGILATOR**

QUESTION 1

- (a) What are greenhouse gases? [3 Marks]
- (b) Name four main sources of greenhouse gases in Swaziland [4 Marks]
- (c) Explain how these greenhouse gases can be reduced in Swaziland (6 Marks)
- (d) What is climate change? (7 Marks)
- (20 Marks)**

QUESTION 2

Write briefly on the following terms/phrases [a to f] below. Give examples to illustrate your answers, where necessary. Each question carries four marks.

- (a) Ideal characteristics of green manure crops.
- (b) Seed viability tests.
- (c) Stages of on-farm trials.
- (e) Methods of determining leaf area in crop plants.
- (f) Methods of applying fertilisers to crops

[20 Marks]

QUESTION 3

- (a) What is conservation agriculture?" (3 Marks)
- (b) Write briefly on the three pillars of conservation agriculture. (9 Marks)
- (c) Which of these three pillars would you recommend for promotion in Swaziland. (3 Marks)
- (d) Why ? (5 Marks)
- [20 Marks]**

QUESTION 4

(a) Fill the blanks in the Table below

List	Plant population (Plants/ha)	Spacing (cm)	
		Inter-row	Intra-row
1		75	20
2	200,000		10
3	66,667	90	
4	10,000	100	
5		60	12.5

(10 Marks)

(b) How much urea (g) would you apply per plant if plant density (plants/ha) is 66,667 plants/ha, inter-row spacing of 90 cm and nitrogen per plant is 2.5 g?

(10 Marks)

[20 Marks]

QUESTION 5

(a) What is tetrazolium test?

(3 Marks)

(b) Name the enzyme that reacts with tetrazolium solution to produce a red substance.

(2 Marks)

What is the name of the red substance that is produced when the enzymes reacts with tetrazolium solution.

(3 Marks)

(b) How would you prepare 1000 cc of 0.1% solution from 500 cc of 1.0% solution?

(3 Marks)

(c) Draw a large cross section of maize seed and label all the organs that will be stained red if the maize seed were alive.

(9 Marks)

[20 Marks]