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**UNIVERSITY OF SWAZILAND**

**FINAL EXAMINATION PAPER**

**PROGRAMME: BACHELOR OF SCIENCE IN AGRONOMY YEAR 4**

**COURSE CODE: CP 401**

**TITLE OF PAPER: AGROFORESTRY**

**TIME ALLOWED: TWO (2) HOURS**

**INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS**

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

**QUESTION 1**

- (a) Explain agroforestry (5 marks)
- (b) Give reasons why trees or shrubs are often the dominant component of all agroforestry systems (4 marks)
- (c) How can the dominance referred to in (b) above be reduced? (3 marks)
- (d) Discuss the niche for agroforestry practices (10 marks)
- (e) Distinguish sequential from simultaneous types of agroforestry practices (3 marks)

**QUESTION 2**

- (a) Why is agroforestry important or relevant? (5 marks)
- (b) What kind of trees and shrubs are favourable for the following agroforestry practices?:
  - (i) fodder banks, (ii) soil and water conservation, (iii) fuelwood production. (15 marks)
- (c) What is carbon sequestration, and what is the role of trees and shrubs in this phenomenon? (5 marks)

**QUESTION 3**

- (a) What constitutes nutritive value of fodder trees and shrubs? (5 marks)
- (b) How are barrier hedges able to control soil erosion? (5 marks)
- (c) Give examples of agroforestry practices that have high potential in Swaziland indicating reasons (10 marks)
- (d) What are the main benefits and limitations of live fences? (5 marks)

**QUESTION 4**

(a) Distinguish the biological, ecological and socioeconomic attributes of agroforestry practices from pure agriculture monocultures (10 marks)

(b) Explain the following: (i) pollarding, (ii) coppicing, (iii) pruning, (iv) multistrata, (v) *Acacia (Faidherbia) albida* (10 marks). Use illustrations for your answers where possible. [10 marks]

(c) Name the advantages and problems associated with biomass transfer with *Tithonia*?

(5 marks)

**QUESTION 5**

(a) Outline the major services obtained from incorporation of trees and shrubs on farms

(10 marks)

(b) Outline the processes by which trees and shrubs improve soil fertility?

(10 marks)

(c) What are the advantages of homegardens?

(5 marks)