



Scott Christian UNIVERSITY

SCHOOL OF PROFESSIONAL STUDIES

DIPLOMA IN AGRIBUSINESS

UNIT CODE/NAME: DAG 109: SOIL SCIENCE

September- December 2019/2020 End Semester Exam

- Time: 2 Hours

Instructions: Answer Question ONE (Compulsory) and any other TWO questions.

QUESTION ONE

- a) Define pedology (2 Marks)
- b) State **five** functions of soil (5 Marks)
- c) Outline **four** ways by which topography influences soil formation (8 Marks)
- d) State **five** key roles of soil water (5 Marks)
- e) Explain **three** causes of soil acidity (6 Marks)
- f) Highlight **two** sources of charges in soil colloids (4 Marks)

QUESTION TWO

You are appointed as soil science specialist in Machakos County

- a) Briefly explain the importance of knowledge of soil PH to your farmers (6 Marks)
- b) Explain **five** reasons for advising farmers to incorporate organic matter into soil. (5 marks)
- c) Describe **four** ways in which nutrients are lost in your area (4 marks)

QUESTION THREE

- a) Explain the importance of adequate fertility for efficient crop water use (10 marks)
- b) Describe **five** properties of clay soils (5 marks)

QUESTION FOUR

- a) Highlight **five** limitations of inorganic fertilizers to a farmer (5 marks)
- b) Explain the **four** processes of nutrient cycling by soil microbes (4 marks)
- c) Describe **three** practices a farmer can use to maintain organic matter (6 marks)

QUESTION FIVE

- a) Using illustration, describe the phosphorous cycle (10 marks)
- b) State five characteristics used to classify soil (5 marks)