



NATIONAL OPEN UNIVERSITY OF NIGERIA
FACULTY OF AGRICULTURAL SCIENCES
DEPARTMENT OF CROP AND SOIL SCIENCES
2020_2 EXAMINATION ...

EXAMINATION: *JANUARY 2020_2 EXAMINATION*

COURSE TITLE: ANALYTICAL TECHNIQUES IN AGRICULTURE (2CU)

COURSE CODE: AGR503

TOTAL SCORE: 70 MARKS

TIME ALLOWED: 1hour 30minutes

INSTRUCTIONS: Answer four questions in all. Question 1 is compulsory (25marks) and any three questions (15marks each)

Q1

- a) Explain the reasons why safety is considered very important in a soil science laboratory? (9marks)
- b) Describe the techniques involved in Quality Control levels of operation? (10marks)
- c) Highlight how calibration graph can be obtained. (6marks).

Q2

- a) In a form of Table list any six (6) parameters related to sampling measurements and describe briefly their laboratory procedures. (12marks)
- b) Define Sampling error as given by FAO. (3marks)

Q3

- a) List 10 steps to be taken to minimise sampling error in animal feed analysis. (10marks)
- b) Define briefly soil sampling? (5marks)

Q4

- a) Briefly explain the term “microscopy” and state its use. (9marks)
- b) State the functions of any three different parts of an optic microscope? (6marks)

Q5

- a) Define Photometer and state any three types of photometers you studied. (9marks)
- b) Differentiate between Classical column chromatography and High-performance liquid chromatography (HPLC) (6marks)

Q6

Write short notes on the following components of Gas chromatography (GC) (15marks)

- a) Auto samplers
- b) Inlets
- c) Detectors
- d) Cryopreservation.

