NATIONAL OPEN UNIVERSITY OF NIGERIA
FACULTY OF AGRICULTURAL SCIENCES
DEPARTMENT OF CROP AND SOIL SCIENCES
2020_2 EXAMINATION ₁₂₄

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.