FEDERAL UNIVERSITY OF TECHNOLOGY OWERRI
School of Agriculture and Agricultural Technology
Department of Soil Science and Technology
Rain semester Examinations 2013/2014

AGR 308: GEOGRAPHIC INFORMATION SYSTEMS IN AGRICULTURE
CREDIT UNIT: 2 UNITS
TIME: 3 HOURS
INSTRUCTION: ATTEMPT ALL QUESTIONS IN SECTIONS A AND B AND ONE (1) QUESTION IN SECTION C.

SECTION A

1 (a) Explain the term Geographic Information System (GIS)
(b) What are data structures? Outline their importance in GIS

2(a) Electromagnetic remote sensing of earth resources involves two generalized processes and elements. Discuss
(b) Define these terms giving example
(i) Active sensors
(ii) Passive sensors

SECTION B

3(a) Concisely define Precision Agriculture (PA) and explain four (4) aims of PA in crop production
(b) Precision Agriculture (PA) is also termed variable rate technology. Carefully describe five (5) areas to which this technology can be applied in crop production.

4(a) Define yield mapping concept
(b) List seven (7) basic components of a grain yield mapping system and their functions

SECTION C

5(a) List Five (5) major areas of livestock science that GIS research is applied to
(b) Articulate in clear terms, one case each of specific GIS techniques applied to any two areas of 5 (a) above

6(a) List four (4) GIS software mostly used in livestock science stating the
(i) Type
(ii) Main applications
(iii) Two (2) advantages and (2) disadvantages of each based on type.