UGOH-GODWIN PRINCE

FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI
SCHOOL OF ENGINEERING AND ENGINEERING TECHNOLOGY
DEPARTMENT OF AGRICULTURAL AND BIORESOURCES
2018/2019 RAIN SEMESTER EXAMINATION TIME: 2 HOURS
COURSE TITLE/CODE: INTRODUCTION TO AGRIC. & BIORESOURCES ENGINEERING/ABE 222
INSTRUCTIONS: ANSWER QUESTION ONE AND ANY OTHER FOUR

1 a: What is Agricultural and Bioresources Engineering?
b: Write short notes on the following specialty areas (i) Soil and Water Resources Engineering (ii) Power Systems and Machinery Design Engineering (iii) Aqua cultural Engineering (iv) Nursery and Greenhouse Engineering (v) Food and Bioprocess Engineering
c: In what areas can an Agricultural & Bioresources Engineer be engaged?

2 a: What is Food Processing?
b: Differentiate between primary and secondary means of food processing
c: Using a flow chart, describe the basic operations in food processing.
d: Give four reasons why sorting of material is important.

3 a: In what ways can aqua cultural production systems be classified?
b: How does the following design considerations affect raceway construction (i) Production intensity (ii) water supply and drainage (iii) soil type and topography (iv) aeration
c: What are the advantages of re-circulating aqua-cultural production systems?

4 a: Write brief notes on the following (i) Embarkment ponds (ii) Excavated Ponds
b: As a consultant of an organization, make a case why the use of the pond system will be preferred to the remaining system types for fish production in FUT,Owerri.

5 a: In order to tackle the worsening food crisis, what will be done to actualize the availability and sustainability of food production?
b: Explain briefly the various signs of food insecurity in Nigeria.

6 a: What do you understand by the following (i) Green house effect (ii) Climate change
b: What are the importance of Green houses to Agriculture?
c: Briefly discuss an irrigation system used to apply crop water in Green houses.