



*"Investing in Africa's Future"*

DEPARTMENT OF AGRICULTURE AND NATURAL SCIENCE

NACP211: Crop Physiology

END OF SECOND SEMESTER EXAMINATIONS

April/May 2019

LECTURER: MTAITA TA

DURATION: 3 HOURS

### **INSTRUCTIONS**

1. Write your Registration Number[**NOT YOUR NAME**] on the answer sheet

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2. Use Answer Sheets Provided To Answer **Four** Questions Only

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3. Begin your answer for Each Question on a New Page

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4. Credit is Given for Neat Presentation

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## **NACP 211: Crop Physiology**

### **Answer Four Questions**

#### **Question One**

- a) Discuss the major concerns of a crop physiologist in agriculture science. [10]
- b) With an aid of well labeled figures, explain the attributes governing yield when:
  - i) Water is limiting. [8]
  - ii) Solar radiation is limiting. [7]

#### **Question Two**

Write about the following crop physiology concepts:

- i) Crop ideotypes. [8]
- ii) How frost killing occurs? [5]
- iii) Crop adaptation to dry conditions. [6]
- iv) Interception of solar radiation. [6]

#### **Question Three**

- a) Differentiate between  $C_3$  and  $C_4$  photosynthetic pathways. [5]
- b) Discuss the internal and external factors that influence photosynthesis. [20]

#### **Question Four**

- a) Clarify the concept of yield components. [5]
- b) With an aid of an appropriate crop physiology formulae, explain why growing of a crop is considered to be an exercise of energy transformation. [10]
- c) Explain the strategies a farmer can use to improve solar radiation interception and utilization. [10]



**Question Five**

- a) Discuss why transpiration is considered to be a necessary evil.
- b) Write briefly about types and uses of anti-transpirants.

**[15]**

**[10]**