



***“Investing in Africa’s Future”***

**(College of health, Agriculture and Natural Sciences)**

**NACP 201: Crop Physiology**

**END OF FIRST SEMESTER EXAMINATIONS**

**November/December 2023**

**LECTURER: Mr. Mtaita T A**

***INSTRUCTION***

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Answer **FOUR** Questions Only

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**DURATION: 3 HRS**

### **Question One**

- a) Analyze the current challenges in crop physiology. [10]
- b) Discuss the main concerns of crop physiology in agriculture science. [15]

### **Question Two**

- a) Analyze why growing a crop is considered to be an exercise in energy transformation. [5]
- b) Discuss the significance of senescence. [5]
- c) Examine the practices to improve interception and utilization of solar radiation by crop plants. [15]

### **Question Three**

- a) Formulate two separate diagrams to aid you in discussing the main attributes governing yield when:
  - i. Solar radiation is limiting. [7]
  - ii. Water is limiting. [8]
- b) Examine the effects of water stress in crop plants. [5]

### **Question Four**

- a) Examine measures for categorizing nutrient essentiality in crop physiology. [6]
- b) Discuss the different types of senescence. [10]
- c) Discuss the concept of crop ideotypes in crop physiology. [9]

### **Question Five**

- a) Discuss the factors favoring nutrients absorption and transport in crop plants. [10]
- b) With the aid of practical examples, examine the use of the different types of plant growth regulators in agriculture science. [15]

### **Question six**

- a) Examine the decisions to be made by a field crop producer when switching to narrow rows. [5]
- b) Discuss the factors to be considered when selecting a cultivar for dry land farming. [10]
- c) Discuss why crop physiologists are not able to frame a single approach that farmers can use to maximize crop yield. [10]

