



**COLLEGE OF HEALTH, AGRICULTURE & NATURAL SCIENCES**

**NACP 112: AGRICULTURE BOTANY AND PLANT PHYSIOLOGY**

**END OF SECOND SEMESTER FINAL EXAMINATIONS**

**APRIL 2023**

**LECTURER: MR. MTAITA T. A.**

**DURATION: 3 HOURS**

***INSTRUCTIONS***

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Answer Four Questions Only

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### Question One

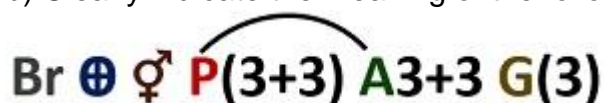
- a). What is a bioassay? [3]
- b). Ascertain the seven characteristics of a good bioassay. [7]
- c). With the use of relevant examples, examine five major uses of phytohormones or their synthetic analogues in agriculture and horticulture. [15]

### Question Two

- a) Clearly indicate the rules followed when presenting scientific names of plants [5]
- b). Briefly discuss the major differences between monocotyledons and dicotyledons. [5]
- c). Write notes on the basic and modified plant organs. [15]

### Question Three

- a). What is a floral formula? [3]
- b) Clearly indicate the meaning of the following floral diagram [7]



- c) Write about pollination and pollination agents. [15]

### Question Four

- a). Analyze why transpiration is considered to be a necessary evil. [5]
- b). Examine the concept of photosynthesis and analyze the factors influencing photosynthesis. [20]

### Question Five

- a). Give an explanation for each of the following observations. [10]
  - i. Water is necessary for fertilization in Bryophytes and Pteridophytes.
  - ii. The maize cob always produces an even number of regular rows .
  - iii. If you plant one mango seed you generally get more than one seedling
  - iv. Shoot apical meristem is often free of viruses.
  - v. '*Sphaceloma manihoticola*' causes "super-elongation" disease in cassava

b). Given a complete plant [i.e., with stems, roots, leaves, etc.] HOW CAN YOU TELL Whether the plant: [5]

- i. is determinate or indeterminate?
- ii. belongs to the family POACEAE or ALLIACEAE?
- III. is monoecious or dioecious?
- iv. Is a dicot or monocot?
- v. has incomplete **but** perfect flowers?

c). Write detailed information about vernalization. [10]

### **Question Six**

- a). Defend the argument that understanding the four plant growth stages is critical in improving agricultural productivity. [10]
- b). Explain why water is a vital substance in plant growth and development. [15]

**End of Examination Paper**