



“Investing in Africa’s future”
**COLLEGE OF HEALTH, AGRICULTURE AND NATURAL
SCIENCES**

NACP 112: AGRICULTURAL BOTANY AND PLANT PHYSIOLOGY

END OF SECOND SEMESTER FINAL EXAMINATIONS

APRIL 2022

LECTURER: MR. MTAITA T. A.

DURATION: 3 HOURS

INSTRUCTION

Choose and Answer Four Questions

Question One

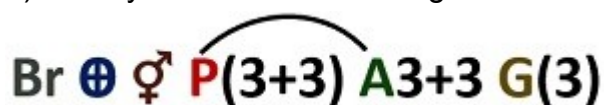
- a). What is a bioassay? [3]
- b). Ascertain the seven characteristics of a good bioassay. [7]
- c). Briefly discuss, giving examples, the use of phyto-hormones in agriculture. [15]

Question Two

- a) Clearly indicate the rules followed when presenting scientific names of plants. [5]
- a). Briefly discuss the major differences between monocotyledons and di-cotyledons. [5]
- b). Write notes on modified plant organs that are important in agriculture or horticulture. [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 in agriculture. [15]

Question Four

- a). Analyze why transpiration is considered to be a necessary evil. [5]
- b). Examine the concept of photosynthesis. [5]
- c). Analyze the factors influencing photosynthesis. [15]

Question Five

- a). Give an explanation for each of the following observations; [5]
 - 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 explanatory notes on Vernalization. [10]

Question Six

- a) What is botany and why do we care? [5]
- b) Discuss the primary functions of the main plant organs. [10]
- c) Identify at least five silent features of the International Code of Binomial Nomenclature. [5]
- d) For each of the following systems of pollination control, explain how it encourages or enforces cross-or self-pollination. [5]
 - 1. Cleistogamy,
 - 2. Dichogamy,
 - 3. Chasmogamy,
 - 4. Homomorphic, sporophytic incompatibility
 - 5. Monoecy, in anemophilous species.

End of Examination Paper