

UGANDA MARTYRS UNIVERSITY
FACULTY OF AGRICULTURE
Examinations 2013-2014

Bachelor of Science in Agriculture Year 3
Bachelor of Science in Organic Agriculture Year 3
Exam: Commodity Improvement and Biotechnology
Time: 02:00Pm – 05:00pm (3 Hrs)
Date: 03rd July 2014

Instructions:

- i. *Attempt any four questions*
 - ii. *Write clearly, number the questions appropriately on the answer booklet*
 - iii. *Read and understand the instructions on the last page of the answer booklet*
 - iv. *Do not write anything on a question paper*
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1. a) Why do breeders develop hybrid varieties mostly in cross-pollinated crops?
b) Discuss the factors a farmer needs to consider in deciding whether to use hybrid seed or an open-pollinated variety.
 2. a) Explain why seed companies should follow the terms set in the seed law.
b) How do farmers benefit from the provisions in the seed law?
 3. a) Explain why a farmer should keep records on animals on a farm.
b) Describe the consequences associated with using the same bull for mating with all cows on a farm for several years
 4. a) Give reasons why some crop plants capable of sexual reproduction are multiplied using approaches specified for asexual plants.
b) What is the role of mutations in breeding of asexual plants?
 5. a) Explain the value attached to use of clonal offspring in plants and give reasons why use of clonal offspring is not common in animal production.
b) What problems are associated with use of transgenic organisms?
 6. a) Why is it essential to have detailed information on the soil fertility aspects in cases where abiotic stress is found?
b) Of what value is the crop germplasm collected from areas that have abiotic stress factors?
 7. a) Discuss the effects of plant breeding on the genetic diversity available for crop improvement. b) Show what measures have been devised to overcome the resulting problems.