

**Uva Wellassa University**  
**BSc in Export Agriculture**  
**Bachelor of Animal Science**



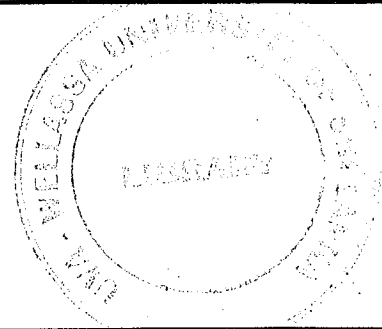
**End Semester Examination – February/ March 2011**  
**Year II Semester I**

**Fundamentals of Agricultural, Food and Biochemical Engineering**  
**Repeat (EAG 232-3)**

**Instructions**

Answer five (5) questions only

No. of questions : Six (06)  
 No. of pages : Two (02)  
 Time : Three hours (3 hours)  
 Total marks allocated : 40/100



1. Write short notes on the following;
  - a. First law of thermodynamics
  - b. Concept of an air parcel
  - c. The adiabatic lapse rates
  - d. Potential Temperature of an air parcel
2.
  - a. What is a beam?
  - b. List three types of beams
  - c. List the steps in analysis of a beam
3.
  - a. Give two (03) applications of biochemical engineering in agricultural production.
  - b. Name two (02) types of bioreactors and briefly explain one type of them.
  - c. Briefly explain the microbial cell growth in a batch culture.
  - d. What are the conditions to be maintained within a bioreactor for microbial growth and briefly explain how those conditions are maintained within a bioreactor?

4. Write short notes on the following.
  - a. Immobilization of microbial cells
  - b. Single cell proteins
5.
  - a. Briefly explain the working principle of a mechanical refrigerator.
  - b. Briefly explain the factors to be maintained inside a refrigerator to ensure the quality of food stored.
6.
  - a. What is blanching and explain the purpose of blanching?
  - b. What is pasteurization and what are the two main pasteurization methods, give specifications of each methods.