Uva Wellassa University
Faculty of Animal Science & Export Agriculture

End Semester Examination - August 2010
Year II Semester I

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

Instructions

Answer **five (5)** questions only

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

1.

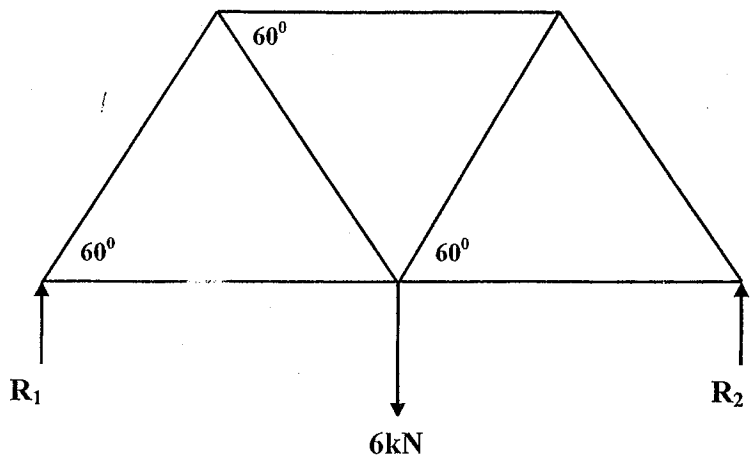
a. What are the **general assumptions** we make, when analyzing trusses?

b. What do you mean by a **Free Body Diagram**?

c. Given below is a roof truss which in equilibrium. Calculate,

i. The R_1 & R_2 reactions.

ii. The **internal member forces.**



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2. Write Short notes on the following;
    a. Concept of an air parcel
    b. Dry and saturated adiabatic lapse rate
    c. Unstable atmosphere
    d. Condensation nuclei
    e. Ice crystal theory of rain formation

3.
    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.

4.
    a. Using an appropriate diagram briefly explain the working principle of mechanical refrigeration system.
    b. Briefly outline the factors to be maintained in a refrigeration system to have a better quality product.

5. Write short notes on the following.
    a. Single cell proteins
    b. Sterilization

6.
    a. What is meant by bio- processing?
    b. Name **three (3)** industrial products produced by biological processes with relevant microorganisms.
    c. Briefly explain the main steps of any **one (1)** of the processes below.
        i. Lactic acid production
        ii. Production of bakers yeast
    d. Write down the **two (2)** main bio chemical reactions which occur during production of vinegar along with relevant micro-organisms.