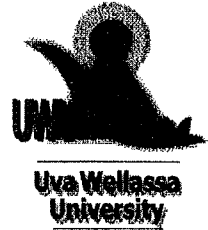


Uva Wellassa University
Faculty of Animal Science & Export Agriculture
BSc in Tea Technology & Value Addition



End Semester Examination – August / September 2014
Year II Semester I

Fundamentals of Biochemical Engineering TEA 221-2

Instructions

Answer all questions

No. of questions : Four (04)

No. of pages : Two (02)

Time : One (01) Hour

Total marks allocated : 60 %

Index No:

.....

PART III - Essay

Question 01

I. An air sample at 30°C Dry Bulb Temperature and 40% relative Humidity is heated up to 45°C. Find the following properties of heated air sample.

(a) Relative Humidity (03 marks)

(b) Dew Point Temperature (03 marks)

(c) Humidity Ratio (03 marks)

(d) Determine the amount of sensible heat (kJ/kg Dry Air) needed to increase the temperature of above air sample

(06 marks)

Question 02

Assume that you are a scientist in an International Research Institute in China. It has been reported that the Capsicum cultivation in the country has been affected by a fungal infection. It has been revealed that *Trichoderma viridae* has some biological control abilities against this infection. You are requested to produce a bio-vaccine using *Trichoderma viridae* giving a set of industrial bioreactors which are needed to produce this bio vaccine.

Question 03

Write short notes on following

- I. First law of thermodynamics
- II. Removal of insoluble particulates in downstream process
- III. Adsorption
- IV. Gel filtration chromatography

(20 marks)

