



Uva Wellassa University  
Faculty of Animal Science and Export Agriculture  
B.Sc. in Tea Technology and Value Addition

End Semester Examination August/September 2014  
Year III Semester II

Tea Process Engineering and Factory Automation- TEA 322-3



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### Instructions

Answer only to any of three (03) questions

No. of questions : Four (04)

No. of pages : Two (02)

Time : 90 minutes

Total marks allocated : 45%

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### Part III- ESSAY

*(Use the psychometric chart, which is given below in answering the relevant questions)*

1. (a) Discuss the advantages and disadvantages of automation of a tea factory.

(b) Giving examples, explain the different conveyor systems and gear systems used in tea processing.

(15 marks)

2. Almost all tea factories in Sri Lanka use fuel wood to generate thermal energy for tea processing. Discuss the proper method of stacking and use of firewood more efficient manner in tea withering and drying processes.

(15 marks)

3. At the drying stage, warm air was used for withering and the temperature and humidity of air 35°C and 80%, respectively. Express your views about the suitability of using such warm air for withering using psychrometric chart. (15 marks)

4. A fixed amount of air initially at 40°C, 1 atm, and 40% relative humidity is cooled down to 18°C at constant pressure. Determine the amount of condensed water (in g/kg dry air) and heat removed (kJ/kg dry air), if condensation occurs. How much heat (kJ/kg dry air) should be given to bring that air to comfort zone at 27°C?. (15 marks)

