



Tea Process Engineering and Factory Automation (TEA 322-3)

**Instructions**

Answer all questions

- No. of questions : Four (04)
- No. of pages : Two (02)
- Total marks allocated : 50%
- Time : 1 ½ Hour

<b>Index No:</b> .....
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Use the given psychometric chart to answer Essay questions.

*Note: Attach the question paper with the answer script*

**Part III –Essay**

**Question 01**

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.

**Question 02**

- (a) Discuss the advantages & disadvantages of automation of a tea factory.
- (b) Explain by giving examples in different conveyor systems used in tea processing.

**Question 03**

Almost all tea factories in Sri Lanka use fuel wood in tea processing to produce thermal energy. Discuss the proper method of stacking and efficiently use firewood in tea withering and drying processes.

**Question 04**

Large amount of electricity is used for withering in Sri Lankan tea factories. Give your suggestions by explaining briefly to reduce the cost on electrical energy.