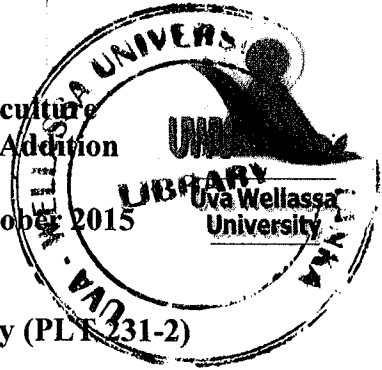


Uva Wellassa University
Faculty of Animal Science and Export Agriculture
BSc in Palm & Latex Technology and Value Addition

End Semester Examination – September / October 2015
Year II - Semester I

Engineering Principles in Palm and Latex Industry (PLT 231-2)



Instructions

Answer **all** questions

No. of questions : Three (03)
No. of pages : Two (02)
Time : One (01) Hour
Total marks allocated : 60%

Index No:

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PART III – ESSAY

Question 01

- (I) Write the Bernoulli's principle of fluid mechanics
- (II) Discuss the applications of Bernoulli's principle

(20 marks)

Question 02

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. (Use the provided psychrometric chart)

- (I) Relative Humidity (04 marks)
- (II) Dew Point Temperature (04 marks)
- (III) Humidity Ratio (04 marks)
- (IV) Determine the amount of sensible heat (kJ/kg Dry Air) needed to increase the temperature up to 45 °C of above air sample.

(08 marks)

Question 03

A rocket, initially at rest, is fired vertically upward with an acceleration of 12.0 m/s^2 . At an altitude of 1.00 km , the rocket engine cuts off. Air friction is negligible in this problem. (Gravitational acceleration is 9.8 m/s^2)

Calculate;

- (I) The velocity of the rocket when the engine cuts off.
- (II) The maximum height that the rocket reaches.
- (III) The velocity of the rocket just before hitting the earth.
- (IV) Time taken by the rocket for the total run.

(20 marks)