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EASTERN UNIVERSITY, SRILANKA
FIRST YEAR SECOND SEMESTER EXAMINATION IN AGRICULTURE 2008/2009
(October/November 2010)
AEN 1201 FARM POWER AND MACHINERY (3:30/30)
Practical Examination

Answer all questions
Time: 02 hrs

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01. A four cylinder 4 stroke engine having cylinder bore of 7.5cm and stroke length of 10cm develops 50 KW at 1650 rev/min. Assuming a mechanical efficiency of 85%, determine the indicated power and mean effective pressure.

02. (i) Briefly state about how the primary tillage activity is being carried out with a mould board plough.

(ii) How do the tilt and disc angle influence the ploughing activity?

(iii) What is the difference in the design/ structure of a disc plough and a disc harrow?

(iv) Briefly explain the design and operational features of the spring loaded tine cultivator (tine tiller).

03. (i) What are the possible causes for poor starting of an engine?

(ii) Give 4 daily maintenance activities of a farm tractor?

(iii) A centrifugal pump failed to draw water from a well when it was operated. Predict the most possible reason for this failure? What is your suggestion to overcome this problem?

(PTO)

04. (i) Name the main components of a knapsack sprayer and state their functions.

(ii) Briefly state, how you would operate a knapsack sprayer?

(iii) Give the importance of calibration of knapsack sprayer.

(iv) How would you determine the speed of advance in the calibration process of a knapsack sprayer?

(v) A knapsack sprayer fitted with hollow cone nozzles is required to be calibrated for an application rate of 150 l/ha. The sprayer speed is 6.5 km/hr and the nozzle height is 50cm from the ground. The swath width of the spray is 1m. Calculate the volume flow rate from the nozzle.