



The Open University of Sri Lanka
 Faculty of Engineering Technology
 Bachelor of Technology

Final Examination- 2012/2013

AEX5230 Power and Machinery in Agriculture

Date : 02.08.2013
 Time : 09.30 - 12.30hrs
 Duration : Three (03) hours

SECTION 2: Answer any four (04) questions.

1. a). List out the factors which affect the rate of work capacity of agricultural machine.
- b). 300ha of row crop is to be planted in a period of 12 days each with 12 hours of possible field time. Working speed is 6.4km/h and 0.75m spacing is required. What minimum size planter is needed? Assume 80% field efficiency.
 (Capacity $C = SWE/10$ ha per hr, in the usual notations)
2. Assume that you are working as an agricultural officer in the reputed seed production company in Sri Lanka. Briefly discuss the methods of cleaning seeds, the common equipment used in the cleaning operations during the commercial seed production process.

3. Write down short notes in any three of the following.
- a). Traditional grain threshing methods.
 - b). Primary components of a disc ploughs.
 - c). Indirect machinery costs
 - d). Packaging of agricultural produce for transport.
4. a). Briefly discuss the four basic disc ploughs currently used in Sri Lanka.
- b). Write down the limitations in portable threshers used by Sri Lankan farmers.
5. a). List out renewable energy sources in Sri Lanka.
- b). Briefly discuss the possible problems of biogas production.
- c). Briefly discuss advantages and disadvantages of hydropower used for the electricity generation.
6. a). What are the advantages and disadvantages of hiring farm equipment for agricultural practices?
- b). Write down the main farm power sources available for agricultural processing in Sri Lanka.
- c). Briefly discuss the differences of operation in two-stroke and four-stroke cycle engines.