



The Open University of Sri Lanka
Faculty of Engineering Technology

Department of Agricultural & Plantation Engineering

Study Programme : Bachelor of Science Honors in Engineering
(Agricultural Engineering) Programme
Name of the Examination : Final Examination
**Course Code and Title : AGX5511: Farm Power and
Mechanization**
Academic Year : 2023/2024
Date : 15th March 2025
Time : 09.30 - 12.30 hrs

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SECTION 2: Answer any four (04) questions.

1. a) Define the terms, using diagrams where appropriate.
(2.5 mark per each)
 - i. Compression ratio
 - ii. Two stroke engines
 - iii. Spark Ignition
 - iv. Traction

b) Discuss the importance of the cooling and lubrication systems in an engine. How do these systems contribute to engine longevity and efficiency?
(15 marks)
2. a) What do you understand by the term “soil tillage”?
(5 mark)

b) Briefly describe **two (2)** tools/ implements used in primary tillage and **two (2)** used in secondary tillage. Explain their functions, uses, and objectives.
(20 marks)
3. a) Explain condition of human labour in Sri Lankan Agriculture.
(10 marks)

b) Compare the status of farm Mechanization and labour force, in Sri Lanka vs Western countries.
(15 marks)

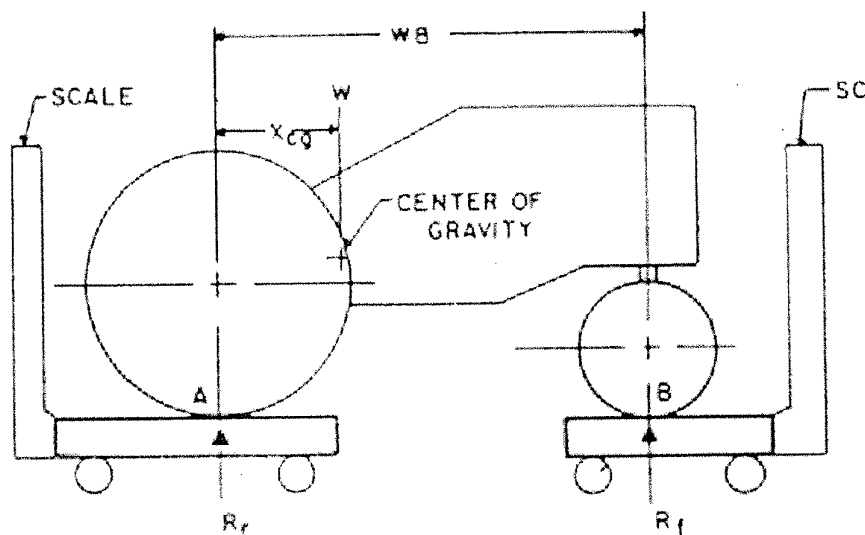
4. Analyse the integration of different farm power sources in sustainable farming systems and their contribution to achieving food security.

(25 marks)

5. a) What is meant by weight transfer in a tractor?

(5 mark)

- b) The diagram below shows a Tractor weight force and ground support forces – **without** a drawbar pull." in a flat land surface.



Draw a labelled diagram illustrating the condition of "Tractor weight force and ground support forces – with a drawbar pull." in a flat land surface and build an equation for the weight transfer value comparing the 2 situation.

(20 marks)

6. a) How does wind energy generate electricity? Briefly explain

(10 marks)

- b) Compare and contrast renewable and non-renewable energy sources in terms of sustainability and environmental impact.

(15 marks)