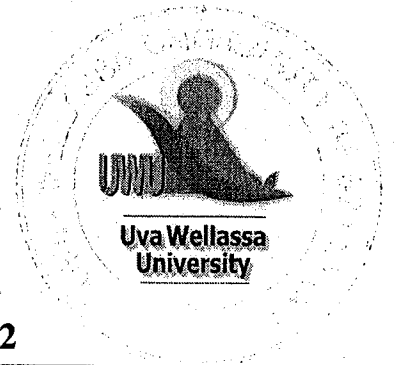


**Uva Wellassa University
B.Sc. in Export Agriculture
Bachelor of Animal Science**



**End Semester Examination June/July 2009
Year II Semester II
Agricultural Farm Mechanization AAS 202-2**

Instructions

Answer **all** questions. Each question bears equal marks.

- No. of questions : Four (04)
- No. of pages : Two (02)
- Total marks allocated : 100%
- Time : Two Hours (02 hrs)

1. Write short notes on the following;
 - a. Principle of Carburetion.
 - b. Principle of differential.
 - c. Valve timing system.
 - d. Power transmission.

2.
 - a. How can the piston displacement of an engine be determined?
 - b. Explain briefly the following related to internal combustion engines.
 - i. Volumetric efficiency.
 - ii. Mechanical efficiency.
 - c. Stroke bore ratio of a three cylinder four stroke diesel tractor engine is 1.2 and its compression ratio is 18:1. The radius of the crankshaft is 60mm. If the engine develops 24KW at the speed of 2400 rpm, calculate
 - i. The actual air consumption within one minute if the volumetric efficiency is 90%.
 - ii. Total volume of combustion chamber in cm³.
 - d. Explain briefly the importance of following parts of a force feed water cooling system.
 - i. Impeller.
 - ii. Thermostat valve.
 - iii. Radiator cap.

3.

- a. Describe how soil physical properties are improved by tillage practices.
- b. How do you measure the draft for a tractor mounted implement?
- c. The line of pull on an implement is about 15° above the horizontal.
 - i. Calculate the draft for a pull of 11KN.
 - ii. What drawbar power would be required at the speed of 5.5km/h?
- d. What are the three main forces that a tillage implement is subjected to when it is moving at a constant velocity?
- e. Briefly explain the mechanical properties of soil.

4.

- a. What is meant by "**Homogenization**"?
- b. Illustrate the principle in homogenization by using a two stage homogenizer.
- c. Briefly explain the **action of a milking machine in each pulsation cycle.**