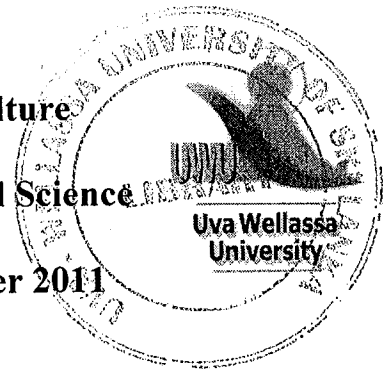


Uva Wellassa University
Faculty of Animal Science & Export Agriculture

BSc. in Export Agriculture / Bachelor of Animal Science

End Semester Examination August / September 2011
Year II Semester I



Agricultural Farm Mechanization (AAS 202-2)
Repeat

Instructions

Answer **all** questions

No. of questions : Four (04)

No. of pages : Two (02)

Total marks allocated : 40/100

Question 01

- I. Write short notes on,
 - a) Four stroke cycle engine
 - b) Liquid cooling system
 - c) Power transmission
 - d) Valve timing system

- II. A four cylinder four stroke engine having cylinder bore 7.0 cm and stroke length 10 cm develops 15KW at 1650 rev/min. Assuming a mechanical efficiency of 85%, find **indicated power and mean effective pressure.**

Question 02

- I. Discuss the principles of the following;
 - a) Governor
 - b) Diesel engine
 - c) Battery ignition

- II. Briefly discuss the components & the functions of a carburetor.

- III. If a driven pulley is made to rotate at 350 rev/min by a driving pulley of 0.3 meter diameter, running at 1400 rev/min, determine;
- Diameter of the driven pulley
 - Length of the open belt, when the pulleys are 2 meters apart
 - Length of the cross belt when the pulleys are 2 meter apart

Question 03

- Discuss how tillage practices help to improve the soil physical properties.
- Briefly explain the following Terms related to field performances of machinery
 - Theoretical Time (TT) & Effective Operating Time (ET)
 - Field Efficiency (FE)
 - Factors affecting field efficiency
- Total draft of a four bottom, 40 cm mould board plough when ploughing 18.0 cm deep at 6 km/hr speed is 1500 kg. Field efficiency is 75%. Calculate
 - Unit draft in KNm^{-2}
 - Actual power requirement in KW
 - Area covered by the plough in ha/hr

Question 04

Write a brief account on **two (02)** of the followings (use labeled diagrams where necessary).

- Centrifugal cream separators
- Plate Heat Exchangers
- Butter churners