



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND
TECHNOLOGY**

SCHOOL OF AGRICULTURAL AND FOOD SCIENCES

**THIRD YEAR FIRST SEMESTER UNIVERSITY EXAMINATION FOR
THE DEGREE OF BACHELOR OF SCIENCE ANIMAL SCIENCES**

2017/2018 ACADEMIC YEAR

REGULAR

COURSE CODE: SES 3311

COURSE TITLE: FARM POWER AND MACHINERY

EXAM VENUE:

STREAM: BSc. Animal Sciences

DATE:

EXAM SESSION:

TIME: 2 HOURS

Instructions:

- 1. Answer ALL questions in section A and ANY other 2 Questions in section B.**
- 2. Candidates are advised not to write on question paper.**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room.**

SECTION A [30 MARKS]

Answer ALL questions from this Section.

1. Define the following terms:
 - a. Mechanized Agriculture (2 Marks)
 - b. Compression ratio (2 Marks)
 - c. Mean effective Pressure (2 Marks)
 - d. Torque (2 Marks)
2. Explain the importance of a cooling system in an IC engine (4 Marks)
3. List three main properties that determine the quality of fuel (3 Marks)
4. Give two classifications of farm power used in agricultural operations (2 marks)
5. Explain two classifications of heat engines (4 marks)
6. List three construction features of IC engine (3 marks)
7. What reasons makes adoption of wind power on many farms low? (2 marks)
8. Give advantages of air cooled engines (4 Marks)

SECTION B [40 MARKS]

Answer ANY TWO questions from this Section.

1. What are the advantages and disadvantages of the following sources of power?
 - a. Animal power? (10 marks)
 - b. human power (4 marks)
 - c. mechanical power (6 marks)
2. discuss the following:
 - a. the functions of power transmission system (4marks)
 - b. requirements of an efficient cooling system (4 marks)
 - c. functions of lubrication (4 marks)
 - d. Two stroke cycle diesel engine and four stroke cycle diesel engine (8 marks)
3.
 - a. On the basis of structural design, tractors are classified into three classes. What are they? (6 marks)
 - b. discuss three main types of air cleaner used in tractors (14 marks)
4. With an aid of a diagram explain the fuel supply system in spark ignition engine (20 Marks)