



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**SCHOOL OF AGRICULTURAL AND FOOD SCIENCES**  
**UNIVERSITY EXAMINATION FOR DEGREE OF BACHELOR OF SCIENCE IN**  
**HORTICULTURE**  
**3<sup>RD</sup> YEAR 2<sup>ND</sup> SEMESTER 2019/2020 ACADEMIC YEAR**  
**REGULAR**

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**COURSE CODE: AHT 3321**

**COURSE TITLE: HORTICULTURAL MACHINES AND FARM POWER**

**EXAM VENUE:** **STREAM: BSc. Horticulture**

**DATE:** **EXAM SESSION:**

**TIME:**

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**Instructions**

- 1. Answer ALL questions in Section A (compulsory) and ANY TWO questions in Section B**
  - 2. Candidates are advised not to write on the question paper**
  - 3. Candidates must hand in their answer booklets to the invigilator while in the examination room**
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## **SECTION A [30 MARKS]**

**Answer ALL questions in this section**

1. Give two classifications of farm power used in agricultural operations ( 4 marks)
2. Name three sources of farm power ( 3 marks)
3. Explain two classifications of heat engines ( 4 marks)
4. List three construction features of IC engine (3 marks)
5. Explain the following operation and state the implements used for each operation.
  - a. Primary tillage ( 5 marks)
  - b. Secondary tillage (5 marks)
6. What are the main functions of a sprayer? (4 marks)
7. What reasons makes low adoption of wind power on many farms? (2 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. State the difference between
  - a. Spark ignition IC engine and Compression ignition IC engine (6 marks)
  - b. Two stroke cycle diesel engine and Four stroke cycle diesel engine ( 8 marks)
  - c. What advantages does CI engine have over SI engine ( 6 marks)
3. a. What factors are considered in the selection of a tractor? (15 marks)  
  
b. List five basic components of a sprayer (5 marks)
4. a. On the basis of structural design, tractors are classified into three classes. What are they? (6 marks)  
  
b. What are the advantages of using a disc plough for land preparation? (14 marks)