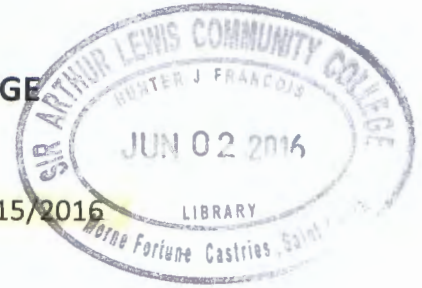


**SIR ARTHUR LEWIS COMMUNITY COLLEGE**  
Division of Agriculture



END OF SEMESTER TWO EXAMINATION – MAY 2015/2016

**PROGRAMME TITLE** : General Agriculture – Certificate  
**COURSE TITLE** : Basic Farm Machinery/Buildings  
**COURSE CODE** : BFM107  
**DATE** : 9<sup>th</sup> May 2016  
**TIME** : 1:00 p.m.  
**DURATION** : 2 ½ hours  
**ROOM** : Room 2  
**INVIGILATOR(S)** :

---



**INSTRUCTIONS:**

This paper consists of two sections.

**Section One – True and False as well as Multiple choice (1 mark each correct response)**

**Section Two – Answer All Questions**

**All responses must be done on the foolscap sheet provided**

**Ensure each question is clearly and correctly numbered**

## Section One

### True and False (1 mark each correct response)

1. A two stroke engine has a better power to weight ratio than a four stroke engine  
**True or False**
2. It is an appropriate practice to use granular NPK fertilizer in a ferti-gation unit  
**True or False**
3. Spark plugs are found in Compression Ignition Engines  
**True or False**
4. Fuels can be obtained from the biological processes of fermentation and anaerobic digestion.  
**True or False**
5. If Mechanical advantage is greater than 1 the output force is greater than the input force  
**True or false**

### Multiple Choice (1 mark each correct response)

1. The impeller is present in which of the following on farm devises
  - A Solo hand sprayer
  - B Solo knapsack sprayer
  - C centrifugal pump
  - D piston pump
  - E) none of the above
2. A windbreak with one or more rows of trees can serve the following purposes
  - A Improve biodiversity
  - B Source of building material
  - C shade cooling
  - D protection from wind
  - E all of the above
3. Fuel consumption is generally higher in the:
  - A Two stroke engine
  - B Internal combustion engine
  - C Four stoke engine
  - D Sterling engine
  - E none of the above

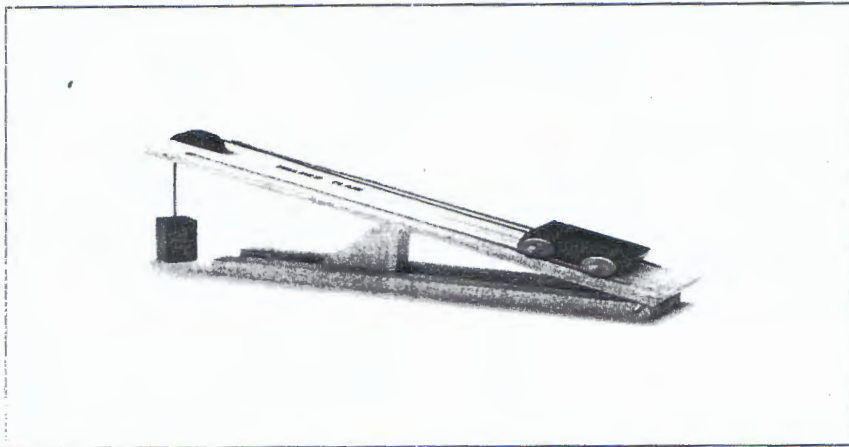
4. Fuel for the internal combustion engine come in the form of
- A gasoline only
  - B gasoline and diesel
  - C photovoltaic
  - D diesel only
  - E thermal
5. Light hitting a metal surface excites the surface metal electrons which are emitted. This phenomenon is called
- A solar energy
  - B photoelectric effect
  - C photovoltaic
  - D solar radiation
  - E thermal radiation

## SECTION TWO

1. Name the four strokes which occur in the internal combustion engine. Explain the events that take place at each stroke. (8 marks)
2. Define the term engine (1mark)
3. Name any three parts of the internal combustion engine and state the function of each part (6 marks)
4. Define the term simple machine (1 marks)
5. Define the term Mechanical Advantage (2 marks)
6. Discuss two advantages and two disadvantages of utilizing solar power (4 marks)
7. For a drip irrigation system state two main components and give their function (4marks)
8. A farmer has a 1000 gallon water tank located on a 5 meter tall platform which is filled by rain water harvesting. Which irrigation system would you advise he install to serve his crops during the months from March to May. Give four reasons for your system choice. (5marks)
9. State two advantages and two disadvantages of growing crops in high tunnels over open field production (4 marks)
10. List two functions accomplished when using machines (2 marks)
11. Draw and label all the class categories of the lever giving an example in each case. (3 marks)

12. Name the simple machines seen in the photograph below

(3 marks)



13. Name the two types of simple machines not present in the photograph above (2 marks)

14. List the three main parts of any agricultural building. (3 marks)

15. You are about to establish and operate your own farm enterprise. Discuss three reasons for investing in the implementation of agricultural mechanization for your agri-business.

(5 marks)

16. Mr. King used a ramp to get his box to the top of step one. Step one is a square with has an area of  $4 \text{ m}^2$ . Calculate the mechanical advantage of the ramp. Show all working and units

(5 marks)

