

Name: _____ Index No. _____ / _____

2525/105

2921/105

AGRICULTURAL ENGINEERING I

Oct./Nov. 2015

Time: 3 hours

Candidate's Signature: _____

Date: _____



THE KENYA NATIONAL EXAMINATIONS COUNCIL

**DIPLOMA IN ENTREPRENEURIAL AGRICULTURE
MODULE I**

AGRICULTURAL ENGINEERING I

3 hours

INSTRUCTIONS TO CANDIDATES

Write your name and index number in the spaces provided above.

Sign and write the date of the examination in the spaces provided above.

You should have the following for this examination:

Scientific non-programmable calculator;

Technical Drawing instruments;

A4 size plain drawing paper.

This paper consists of EIGHT questions.

Answer any FIVE questions in the spaces provided in this question paper.

All questions carry equal marks.

Maximum marks for each part of a question are indicated.

Candidates should answer the questions in English.

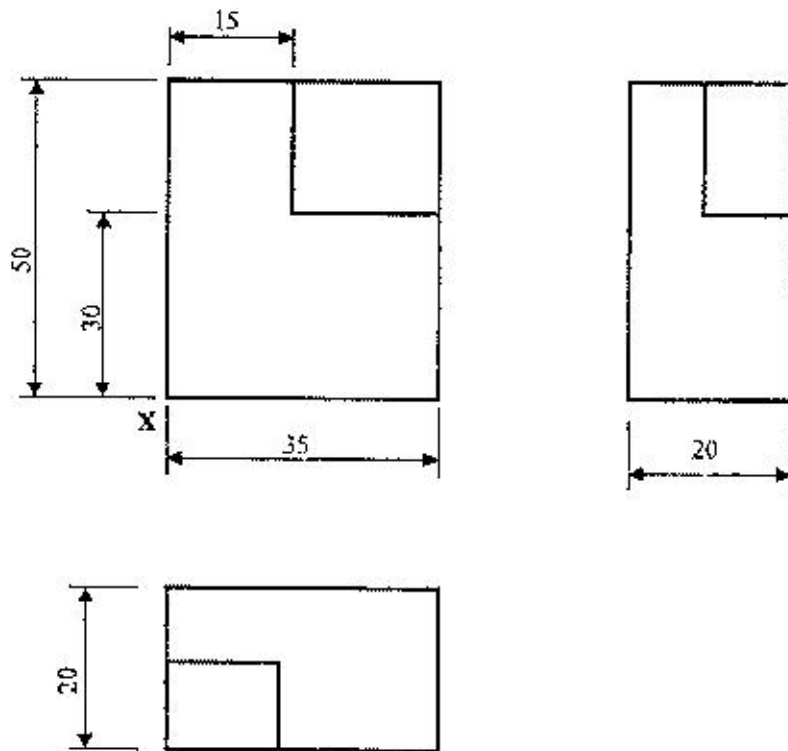
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Question	1	2	3	4	5	6	7	8	TOTAL SCORE
Candidate's Score									

This paper consists of 16 printed pages.

Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

1. (a) State any **six** functions of the coating on an electric arc welding electrode. (6 marks)
- (b) Using diagrams, explain **two** methods of striking an arc during electric arc welding process. (14 marks)
2. (a) Explain the **three** types of tractor power. (6 marks)
- (b) Discuss the practices that can be applied in order to obtain optimum power from draught animals. (14 marks)
3. (a) Outline any **five** maintenance requirements for a rotary cultivator. (5 marks)
- (b) Draw a well labelled layout of a rotary cultivator showing the power flow direction. (7 marks)
- (c) Explain **four** adjustments that can be carried out on a mouldboard plough. (8 marks)
4. (a) Outline any **four** safety precautions to be observed while using a bench grinding machine. (4 marks)
- (b) Explain why a water type fire extinguisher should never be used on electrical fires. (4 marks)
- (c) Explain the fire fighting procedure for a small fire outbreak in a workshop. (12 marks)
5. (a) State any **five** types of lines used in technical drawing. (5 marks)
- (b) Figure I shows three views of an engineering component drawn in 1st angle orthographic projection. Draw the component in Isometric projection taking corner "X" as the lowest. (15 marks)



Note: Dimensions in mm

Fig. 1

6. (a) Explain **eight** reasons why a hammer mill would be preferred to a plate mill for grinding feed. (12 marks)
- (b) With the aid of diagrams, explain how the separation of air and feed is achieved in a hammer mill. (8 marks)
7. (a) Explain the **three** tractor implement hydraulic system controls. (9 marks)
- (b) Describe the procedure of attaching an implement to the 3-point linkage of a tractor. (11 marks)
8. (a) Draw a well labelled diagram of a micrometer screw gauge. (12 marks)
- (b) Using a diagram, illustrate a micrometer screw gauge scale reading of 25.83 mm. (8 marks)