(The University of choice)

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

UNIVERSITY EXAMINATIONS 2021/2022 ACADEMIC YEAR

YEAR TWO SECOND SEMESTER EXAMINATIONS (Main examination)

DIPLOMA IN AGRICULTURE, DIPLOMA IN HORTICULTURE

COURSE CODE: DAG 077
COURSE TITLE: FARM POWER AND MACHINERY

DATE: 26TH April, 2022 **TIME: 3-5 PM**

Instructions:
This paper consists of 5 questions
Section A is compulsory, Answer any 3 questions from Section B

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 3 Printed Pages. Please Turn Over.

(b) Briefly describe the components and functioning of a boom sprayer **(5 marks)**

(c) Distinguish between the splash and force feed methods of tractor engine lubrication **(4 marks)**

Question Four (15 marks)

(a) Briefly describe the components and functioning sequence of a combine harvester, hence state how it can be customised for different grains **(7 marks)**

(b) Highlight the typical routine maintenance procedures that should be performed for

i. The farm tractor
ii. Field machinery **(8 marks)**

Question Five (15 marks)

(a) Describe the procedure of calibration of a row planter **(5 marks)**

(b) Outline the different methodologies in which tractor implements are hitched onto the tractor, and the respective implement type **(5 marks)**

(c) Briefly discuss the criteria that as a farm supervisor you would adopt in basic

i. Machinery management
ii. Machinery storage **(5 marks)**

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MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

MAIN CAMPUS

UNIVERSITY EXAMINATIONS 2021/2022 ACADEMIC YEAR

THIRD YEAR SECOND SEMESTER MAIN EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURAL ECONOMICS

COURSE CODE: AEN 303

COURSE TITLE: IRRIGATION AND DRAINAGE PRACTICES

DATE: 25TH APRIL, 2022 **TIME: 3-5PM**

Instructions to candidates

- This paper consists of two sections
- Answer **ALL** questions in **SECTION A** and **TWO** questions in **SECTION B.**
- All symbols have their usual meanings unless otherwise stated.
- One Cartesian graph paper should be provided.
- Candidates should not write anything on the question paper.
- Time allowed is **TWO (2)** hours.

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Distance from furrow head (m)	Advance time (mins)
0	0
10	1.5
20	3.5
30	6.0
40	10.0
50	19.0
60	30.0

Use of double ring infiltrometer gave $\mathbf{i = 2.5t^{-0.5}}$ and $\boldsymbol{Di}$ = 50mm. Estimate the length of furrow to keep deep percolation minimum **(10 marks)**

Question FIVE **(10 marks)**

A cotton crop is to be grown in an area designated for sprinkler system. The following data is available: DRZ = 0.8m, ETc = 6mm/day, MAD = 70%, FC =28%, PWP = 16%, B.d = 1.2g/cm^3. A period of 2 days is required for various farm operations and the system efficiency is 85%. If the water is sprinkled at a rate of 8 mm/hr and there are 2 rest days, compute:

i. Net Water Requirement (NWR) **(2 marks)**

ii. Gross Water Requirement(GWR) **(2 marks)**

iii. Irrigation Interval (II) **(2 marks)**

iv. Design Irrigation Interval (Design II) **(2 marks)**

v. Duration of water application **(2 marks)**