

NATIONAL UNIVERSITY OF LESOTHO

FACULTY OF AGRICULTURE - DEPARTMENT OF CROP SCIENCE

AGRICULTURAL MECHANIZATION & MACHINERY MANAGEMENT- CPS 2504

August 2023

MARKS: 60

TIME: 3 HOURS

INSTRUCTIONS :

Answer all five (5) questions.

Number your answers correctly

QUESTION 1

Name four sources of farm power, advantages and disadvantages of each. (10)

QUESTION 2

Define the following terms as pertain to Internal Combustion Engines (ICE):

- i). Combustion chamber (2)
- ii). Top Dead Center (2)
- iii). Bottom Dead Centre (2)
- iv). Bore (2)
- v). Swept volume (2)

QUESTION 3

Demonstrate with the help of **chemical formulae** what takes place while a battery is charging and discharging (at anode and at cathode) (10)

QUESTION 4

Discuss troubleshooting for a tractor cooling system using the following format: (10)

No.	PROBLEM	CAUSES
1	Coolant leakage	
2	Engine overheats	
3	Slow warm up	

QUESTION 5

Discuss the procedure for calibrating a wheat drill to give 80 kgs. per hectare, given the following:

- i). Drive wheel radius = 25 cm
- ii). Effective width of planter = 1.5 m

(20)