



"Investing in Africa's future"

COLLEGE OF HEALTH AGRICULTURE AND NATURAL SCIENCES

NAAE 211: FARM POWER AND MACHINERY

END OF SECOND SEMESTER EXAMINATION

APRIL 2026

LECTURER: MR NATHAN BANALYA

DURATION: 3 HRS

INSTRUCTIONS

Answer all questions in Section A and any **three** from Section B

Additional Material: Calculator

SECTION A (*Answer ALL Questions in this Section*)

QUESTION ONE:

- a i). Define farm power. (2 marks)
- ii). List any five examples of farm power sources. (5 marks)
- iii). A farmer in a rural area without access to electricity wants to irrigate a small vegetable plot. Suggest two possible farm power sources he could use and justify your choice. (5 marks)
- b). Explain any four advantages of using mechanical power over animal power in farming. (8 marks)
- c) i). Differentiate between two-stroke and four-stroke engines. (4 marks)
- ii). State any two disadvantages of using internal combustion engines on farms. (2 marks)
- iii). Name two types of harvesting machinery and the crops they are used for. (4 marks)
- d. Explain the difference between primary tillage and secondary tillage. (5 marks)
- e). i). What is the function of a power take-off (PTO) shaft in a tractor? (2 marks)
- ii). List any three safety precautions when operating farm machinery. (3 marks)

SECTION B (*Answer any Three Questions from this Section*)

QUESTION TWO:

- a) Analyze the role of tractors in mechanized farming. (10 marks)
- b) Explain the key factors influencing tractor selection for smallholder versus commercial farms? (10 marks)

QUESTION THREE:

Assess the contribution of post-harvest machinery (threshers, shellers, dryers) to reducing losses and improving food security. (20 marks)

QUESTION FOUR:

- a) Discuss safety considerations in the use of farm power and machinery. (12 marks)
- b) Suggest measures that can be implemented to reduce accidents and improve operator welfare. (8 marks)

QUESTION FIVE:

- a) Explain the concept of drawbar power, brake power, and PTO power in tractors. (10 marks)
- b) Discuss how these measurements influence the performance of farm operations. (10 marks)

QUESTION SIX:

- a) Describe the classification of tillage implements. (8 marks)
- b) Discuss how primary and secondary tillage operations contribute to soil preparation and crop productivity. (12 marks)

END OF EXAM