



**NATIONAL OPEN UNIVERSITY OF NIGERIA  
FACULTY OF AGRICULTURAL SCIENCES  
DEPARTMENT OF CROP AND SOIL SCIENCES**

**2025\_1 EXAMINATION**

**COURSE TITLE: FARM POWER AND AGRIC. MECHANIZATION (2CU)**

**COURSE CODE: CRP 312**

**TOTAL SCORE: 70 MARKS**

**TIME ALLOWED: 2hours**

**INSTRUCTION: Answer THREE Questions in All. Question 1 is compulsory (30marks) and any TWO questions (20 marks each)**

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**QUESTIONS**

1.

- a. Define a mower and describe its primary purpose in agricultural operations. (15 marks)
- b. Discuss the evolution of agricultural tractor usage in West Africa, particularly focusing on the differences in usage per hectare among countries. (5 marks)
- c. Describe the role of agricultural mechanization in transforming agriculture into a progressive commercial industry, using examples from countries like India, China, Brazil, and Turkey. (10 marks)

2.

- a. Explain the operational principles of side-delivery rakes, including reel types and their construction. (10 marks)
- b. Discuss the key factors affecting the performance of threshers. How do crop factors, machine factors, and operational factors influence threshing quality and efficiency? (10 marks)

3.

- a. Differentiate between external combustion engines and internal combustion engines. (10 marks)
- b. Describe the components and working principle of a mechanical thresher. How does it improve the efficiency of threshing compared to traditional manual methods? (10 marks)

4.

- a. Compare the average cereal production in Africa with the world average as of 2014. What do these figures suggest about agricultural productivity in Africa? (10 marks)
- b. Explain the importance of maintaining proper clearance between the ledger plate and the sickle section in a cutter bar mower. (10 marks)