NATIONAL OPEN UNIVERSITY OF NIGERIA
14-16 AHMADU BELLO WAY, VICTORIA ISLAND LAGOS
MARCH/APRIL 2016 EXAMINATION
SCHOOL OF AGRICULTURAL SCIENCES

Course Code: **AGM314**
Course Title: **Introduction to Agricultural Mechanization**
Credit Unit: **3**
Time Allowed: **3 Hours**
Instruction: **Answer 5 questions from 7 questions.**

1(a). Explain the importance of power and machinery in modern agriculture.

1(b). Identify areas of employment in agricultural power and machinery.

2(a). Identify the operating principles of the internal combustion engine.

2(b). Identify the basic parts of the internal combustion engine.

3(a). Define the three basic terms which are used to describe engine specification characteristics.

3(b). Calculations:

What is the piston displacement (pd) of an engine whose bore and stroke are given as 69.85mm x 57.15mm respectively. With the measurement given what would be the volume of the cylinder; if the area is 40cm^2. (Assume a two cylinder engine).

QUESTION 4(a). What are the terms used to describe mechanical power often associated with the use of agricultural work.

QUESTION 4(b). Identify the three types of power used to explain agricultural power.

QUESTION 5(a). Differentiate between the following terms (a) Work (b) Force (c) Power

QUESTION 5(b). A cylinder head weighs 45.36kg is moved a distance of 150m in 30 seconds to a safe location. Calculate (1) Force (2) Work done and (c) Power

QUESTION 6(a). Name the parts of an internal combustion engine and write short notes on each.

QUESTION 6(b). Differentiate between bore and stroke of an engine.

QUESTION 7(a). Distinguish between (a) engine and (b) motor.

QUESTION 7(b). What is the basic principle of an engine operation?