NATIONAL OPEN UNIVERSITY OF NIGERIA
14/16 AHMADU BELLO WAY, VICTORIA ISLAND, LAGOS
SCHOOL OF SCIENCE AND TECHNOLOGY
JUNE/JULY EXAMINATION
COURSE CODE: AGM314
COURSE TITLE: INTRODUCTION TO FARM MECHANIZATION (2 Units).
TIME ALLOWED:2 HOURS
INSTRUCTION: ANSWER FOUR (4) QUESTIONS (25Marks each)

1a.What is a basic machine? Give 4 example of basic machine.
1b. A mass of 35kg is to be lifted by a wheel and axle system. The ratio of wheel to radius of axle is 5:1 Given that the system is 84% efficient; determine the effort required to lift the body. Take g = 10m/s2.
1c. List 5 workshop hand tools

2a. Describe briefly these terms use in engine.
Clearance volume
Bottom dead centre
Bore
Stroke
Swept volume
Engine capacity
Engine size
2b. what is the Cycles of Operation of an engine?

3. Describe the principles of 4-stroke Petrol Engine.

4a. Describe in brief these primary tillage equipments.
Mould board
Disc
Chisel
Sub-soiler

4b. The pulley on a machine is 230mm diameter. It is to be driven at 183rev/min. A of insectide so that wastage that could arise as a result of excessive application is avoided.

5a. describe how power is transmitted by a belt.
5b. A flat leather belt is 70mm wide and 7mm thick. Given that the safe tension per
cm of width of the belt is 140N and the belt is used in driving a 360mm pulley at 300rev/min.
Determine:
i. the allowable tension
ii. the driving tension
iii. the power transmitted by the belt.

6a. Explain the operation of a Thresher.
6b. Give a short description of a mist blower and its function.
6c. what use are the following materials in farm workshop: Rubber, mortar, reinforced concrete and paints?