AFRICA UNIVERSITY
A United Methodist-Related Institution

"Investing in Africa's future"

COLLEGE OF HEALTH, AGRICULTURE & NATURAL SCIENCES

NACP 113: PRACTICAL AGRICULTURE 1

END OF FIRST SEMESTER FINAL EXAMINATIONS

NOVEMBER/ DECEMBER 2022

LECTURER: MR. TABARIRA J.

DURATION: 3 HOURS

INSTRUCTIONS

Answer any **four** questions

All questions carry equal marks (20).

DO NOT repeat material.

Write legibly.

Credit will be awarded for logical, systematic and neat presentations

Question One

The information below relates to a maize production program for a particular variety:

i) Seed size is medium round giving 2000 seeds per kg.

ii) The germination percentage of the seed is 90%.

iii) Recommended fertilizer rate is 300kg Comp. D per hectare

iv) Plant spacing 90 cm inter row by 25 cm intra row.

Using the information above, calculate the following:

a. Plant population at planting to achieve the targeted plant population at harvesting. **[4]**

b. Amount of seed (kg) required at planting to achieve the desired plant population at harvesting. **[3]**

c. Amount of fertilizer to broadcast per m^2. **[3]**

d. Amount of fertilizer to drill along a 100m row. **[3]**

e. Amount of fertilizer to apply per planting station. **[3]**

f. Explain the importance of timing of planting and the method of planting used **[4]**

Question Two

Define the following:

a. Plant population **[1]**

b. Seed rate **[1]**

c. Spray volume **[1]**

d. Chemical application rate [1]

e. Doe [1]

f. Define conservation agriculture [1]

g. Discuss the principles of conservation agriculture [12]

h. Would you recommend this farming system in your community, justify your answer [2]

Question Three

During sprayer calibration a farmer obtained the following information:

Spray volume = 250 litres

Sprayer capacity = 15 litres

Herbicide application rate = 3 litres / hectare

Calculate:

a. Number of knapsack sprayers to complete one hectare [3]

b. Amount of chemical per knapsack sprayer [3]

c. Area covered by each knapsack sprayer [3]

d. Amount of chemical to apply in a 85m x 45m plot [3]

e. Suppose the worker increases his walking speed what effect will this have on the spray volume and weed population in the field [3]

f. Weeds can be controlled using herbicides or hoeing (using a hoe). Justify which method you would recommend for your community [5]

Question Four

a. Outline four main preparatory activities your would undertake before receiving day old chicks at your farm [8]

b. Based on the practical session you conducted at the AU farm, explain critical activities that were taken upon receiving the day old chicks [7]

c. State two breeds of rabbits being kept at AU. [1]

d. How would you tell that a female rabbit (doe) is on heat [4]

Question Five

a. Define tillage and state 4 objectives of tillage [5]

b. What is the difference between conventional tillage and minimum tillage [2]

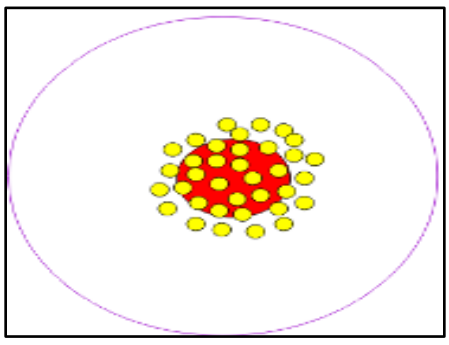
c. State 3 critical farming operations you have performed in your field plot at the farm. [3]

d. Explain the importance of each of the operations cited in (c) above. [6]

e. Outline the problems you have experienced in growing your crop up to the current state of growth [4]

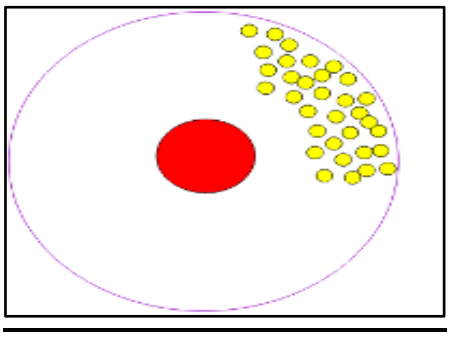
Question six

a. The sketch diagrams below illustrates the behavior of broiler chicks in the brooder in relation to heat source (red/dark dot in the centre). Demonstrate your understanding of chick behavior by explaining the prevailing conditions in the brooders (A-D below) and what corrective measures you would take.



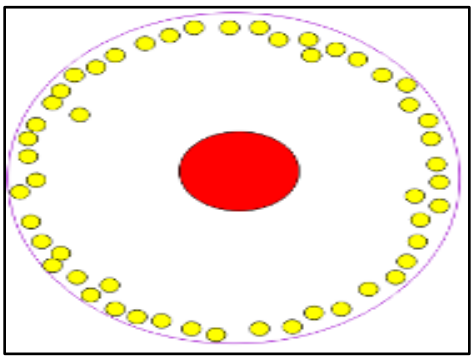
[4]

A.



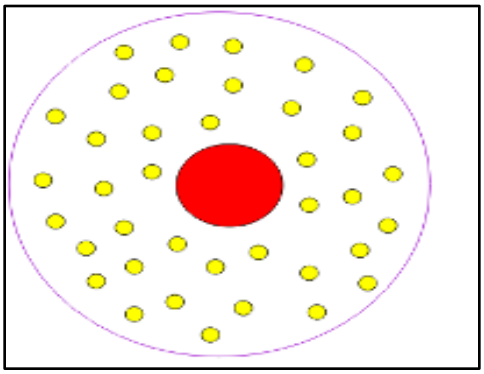
[4]

B.



[4]

C.



[4]

D.

b. Comment on the AU brooding system and suggest possible improvements. [4]

END OF EXAMINATION PAPER