

NSARU CLUSTER EXAMINATION BOARD

2023 END OF SECOND TERM EXAMINATIONS FOR FORM 3

AGRICULTURE

MARKING KEY

1. (a)
 - Irrigating, virgin land with poor quality irrigation water.
 - The application of inorganic fertilizers, which may lead to build up of salts in the soil.
 - Salts being released into the soil because the parent material contains a lot of salts
- (b)
 - Soil pH
 - Cation Exchange Capacity (CEC),
 - Salinity and Sodicty
- (c)
 - Put a soil sample into a tin or beaker after that add some water to the soil sample then stir. If there is blue and red litmus paper then firstly dip blue litmus paper in the solution followed by red litmus paper. Blue litmus paper turns red if the solution is acidic while red litmus paper turns blue if the solution is alkaline.
- (d)
 - Green beans, field beans, apples, pears and citrus
- (e)
 - (i) Platy structure.
 - (ii) The plates overlap each other making such soils poor for crop production due to poor root penetration.
2. a.
 - (i) Universal Industries LTD
 - (ii).Bakhressa
 - (iii). Malawi Dairy Industries
- (b)
 - National smallholder farmers Association of Malawi NASFAM
 - One Acre Fund
 - The smallholder Coffee farmers Trust
 - Horticultural Development Organization of Malawi.
- (c)
 - Increasing agricultural production
 - Agricultural credit is used to buy fertilizer, the application of the fertilizer increases soil fertility.
 - Increase income per unit of given resource
 - If credit is invested it increases the output of the products, hence the farmer gets more money from the sales of the products.
 - Improves nutrition and food security among farmers.
 - Because of high farm yields, the farmers have adequate food all the times.
 - Improving the welfare of farmers



- Increased farm income helps farmers to pay for the necessities such as machines and household goods.

- Increasing employment opportunities for rural people

- Provision of agricultural credit helps farms to expand

3 (a)

- Counting the items physically
- Physical measurement , for example size of the land, buildings and weighing of a available crop yields
- Calculating the value of assets using current markets prices.

(b)

- To manage the artificial insemination program
- To predict the date of calving
- To cull infertile cows
- To monitor a cows lactation
- To Identify Cows that are due to be mated

(c). Depreciation = $\frac{\text{Original cost} - \text{salvage value}}{\text{Life span (years)}}$

$$= \frac{\text{K77000} - \text{K7000}}{7}$$

$$= \text{K10,000/yr}$$

(d) . (i). Total assets = cash in hand K75,000

Value of machinery K420,000

Value of buildings + K236,000

K731,000

(ii). Net worth = Total assets – Liabilities.

Liabilities = Bank loan

K367,000

Interest Payable

+ K122,000

K489,000

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$$= \text{K731,000} - \text{K489,000}$$

$$= \text{K242,000}$$

(iii). The farm is solvent

(iv). Because the net worth of the farm is positive that indicates profitability of the farm.

4 (a)

- When a farmer wants to expand the existing enterprise or make additions to existing enterprises.
- When a farmer wants to change one enterprise for another.
- When a farmer wants to introduce a new enterprise.
- When a farmer wants to buy a new farm machinery.
- When a farmer wants to adopt a change in method of production.

(b) . (i). Variable costs

Casual labour = K1500.00

Fertilizer = +K5000.00

K6500.00

Fixed costs

Permanent labour = K20000.00

(ii). Income of the farmer = price × total yields

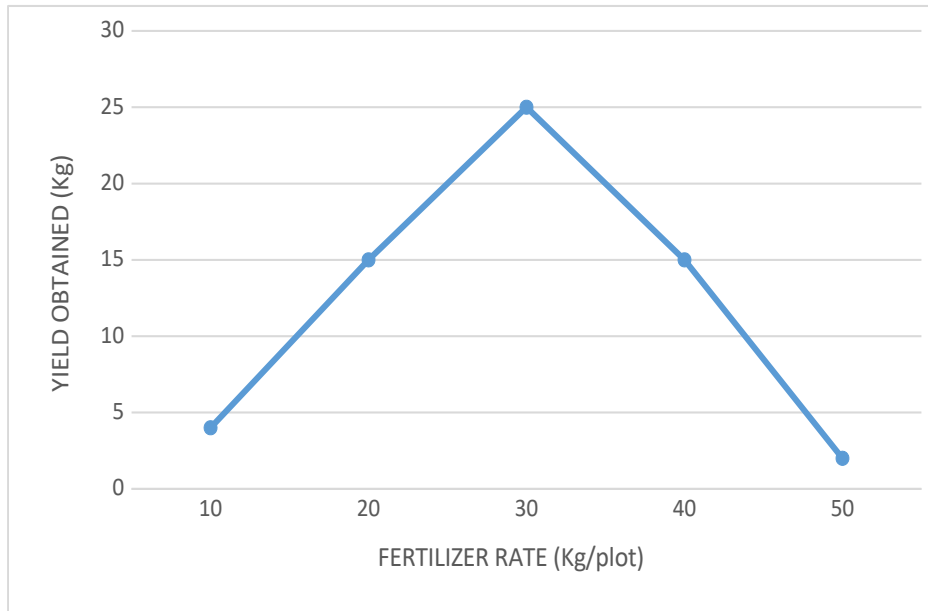


$$= \text{K}200/\text{Kg} \times 2000\text{Kg}$$

$$= \text{K}400,000$$

(iii). Gross margin = Income of the farmer – Variable costs
 $= \text{K}400,000 - \text{K}6500$
 $= \text{K}393,500.$

5(a) (i)



(ii). Diminishing marginal returns.

(iii)

- It helps the farmer to understand the relationship between level of input and level of production so that the farmer can decide on the best level of input to use for optimum production.
- Identify the point (stage) when diminishing returns set-in.
- Avoid waste of farming resources.
- Understand that there is a point or stage where benefits of doing something will slowly diminish.
- Understand that spending and investing more and more in a product where other factors remain constant, the returns will begin to diminish in the long run

(b). It affects the choice of enterprise in the sense that the enterprise is accessed in terms of favorable soils, markets and climatic conditions before it is chosen to be conducted in an area.

(c)

- Competitive enterprise.

This is where an increase in one enterprise results in a decrease in the other enterprise. - For instance, a farmer may have 10 hectares of land which is appropriate for a combination of maize and sorghum. If more of either maize or sorghum is planted, the output of the other declines. This is because the two enterprises are competing for the same resources (land).

- Complementary enterprise.

- An increase in one product (enterprise) may increase the total production of the other through beneficial effects. For example, poultry and vegetable production are complementary.

- Supplementary enterprise.



This is where an increase in one product does not affect the other, but adds to the total income of the farm. For example, a farmer having sufficient land and family labour, grows maize in the rainy season, in the dry season, he may decide to make use of the idle land and labour by growing vegetables such as tomatoes.

6. (a) Agricultural cooperative is an organization formed by a group of farmers (ten or more), who join together to pool their resources and services to achieve a common goal.

(b)

- Get the minimum number of eligible persons to form a cooperative.
- Articulate the objectives of the cooperative.
- Elect an interim committee.

(c)

- A cooperative should be legally constituted, with guiding rules or regulations.
- Participation is voluntary. People are free to join or withdraw.
- Cooperatives are impartial and not based on political or religious grounds.
- A cooperative is open to all farming community members who share a common interest.
- Cooperatives are organized and run according to democratic principles (one person, one vote).
- A committee of up to ten members is democratically elected i.e. Chairperson, Secretary, Treasurer and Committee members.
- The election of members is based on trust and quality leadership skills.

(d)

- Carry out market functions on behalf of the farmers. Cooperatives grade, sort and process the produce.
- Provide short-term credit facilities to the farmers. This may be in terms of inputs or cash loans at the end of the production period.

Section B

7

- Profitability of the enterprises.
- The availability of farming resources.
- Risks and uncertainty.
- Changes in prices.
- Changes in technology.
- Crop rotation.

8

- Lack of capital.
- Disloyalty amongst members.
- Political interference.
- Lack of management skills.



- Lack of storage facilities.
- Lack of equity and equality among members.

9

Farmers to maximize the farm enterprises for profits, they need to do the following enterprise combinations.

Poultry and vegetables, the manure from the poultry will be applied in the field of vegetables which will add nutrients in the soil making vegetables grow well and increasing their production and the vegetables can be used as feeds to the poultry which increases their production. Therefore, increase in both poultry and vegetable farming production will also maximize the farmers' profits.

Maize and beans, maize will support the production of beans by staking while beans will fix nitrogen in the soil to be used by maize as result both farming enterprises will give more yields which will maximize the profits.

Poultry and fish, the manure from the poultry can be applied in the fish pond for the growth of planktons and fish will have plenty of feeds therefore, increase their production while fish can be used as feeds to the poultry in the form of fish meal which will increase poultry production.

Maize and beans, will provide very good soil cover hence reducing soil erosion. Water will infiltrate well in soil which will be used by these plants as results they will grow well.

Vegetable, poultry and fish, the water from the pond can be the source of water for irrigating the vegetables and vegetables can be the source of food to poultry while manure from poultry can be the source of nutrients to the fish pond for the growth of planktons so increasing production in all of the farming enterprises will increase their returns which will maximize the profits.