CATHOLIC DIOCESE OF KAKAMEGA EVALUATION TEST
JULY/AUGUST EXAM 2023
443/1 AGRICULTURE PAPER 1 MARKING SCHEME

SECTION A (30 MARKS)

1. List two ways agriculture contributes directly to existence industries in Kenya (1mk)
   i). Providing raw material.
   ii). Providing market for industrial goods.
2. State four factors that increase seed rates in maize crop. (2mks)
   i). Seed impurity
   ii). Close spacing
   iii). Early planting
   iv). Low germination percentage
   v). More seeds per hole / broadcasting
3. What are four farming practices that destroy soil structure. (2mks)
   i). Use of heavy machinery that creates hardpan
   ii). Cultivating wet soils using heavy machinery
   iii). Overstocking
   iv). Burning crop residues
   v). Continuous cropping.
4. Give one reason for carrying out each of the following practices in crop production;
   a). Shading of a nursery. (1mk)
   i). Reduce damage of seedlings by strong wind
   ii). To control splash erosion that can uproot seedlings
   iii). Reduce evaporation/transpiration by strong wind.
   b). Hardening off. (1mk)
   i). Prepare seedlings for the harsh conditions expected in the field.
   c). Gapping (1mk)
   i). To acquire optimum plant population.
5. Give four reasons for preparing land early before planting a crop. (2mks)
   i). Allows time for weeds to die
   ii). Facilitate timely subsequent operations
   iii). Allows water infiltration
   iv). Allows soil to aerate
   v). Control soil borne pests
   vi). Minimizes competition for labour.
   vii). Allows time for decomposition of organic matter.
   viii)Control soil borne diseases
6. List four reasons for pruning fruit crops. (2mks)
   i). For adequate light penetration into the plant
   ii). Improve quality of the fruits
   iii). Reduce incidences of pests
   iv). Enable effective use of chemical sprays.
   v). Facilitate easy harvesting.
   vi). Reduce instance of disease attack
7. State four functions of agroforestry to a maize crop. (2mks)
   i). Leguminous trees fix nitrogen into the soil

ii). Trees acts as wind breakers.
iii). Trees stabilize soil against soil erosion
iv). Leaf litters decompose to form humus.
v). Trees improve and act as water catchment area/conserves water

8. State four sources of organic matter in the soil. (2mks)
   i). Farm yard manure
   ii). Compost manure
   iii). Organic mulches
   iv). Green manures
9. State four branches of livestock farming. (2mks)
   i). Apiculture / Bee keeping
   ii). Aquaculture / Fish farming
   iii). Poultry farming
   iv). Nomadic pastoralism.
10. What is meant by the term preference and choice as used in agricultural economics. (1mk)
   ➢ It is the act of deciding how to allocate scare resources to alternative uses based on the farmers interest.
11. List four disadvantages of chemical pest control in crop production. (2mks)
   i). Pesticides are expensive
   ii). Most pesticides are non selective hence kill useful insects
   iii). Pest may develop resistance
   iv). Most pesticides are toxic to man
   v). Requires care and kill in handling and application
12. State four functions of nitrogen in crops. (2mks)
   i). Protein formation
   ii). Chlorophyll formation
   iii). Encourages vegetative growth in crops
   iv). Regulates availability of phosphorous and potassium in plants
   v). Increase the size of grains in cereals
13. Name four classes of weeds. (2mks)
   i). Perennial weeds
   ii). Broad leaved weeds
   iii). Annual weeds
   iv). Biennial weeds
   v). Narrow leaved weeds
14. State four factors that would affect the quality of silage. (2mks)
   i). Forage species used
   ii). Stage of defoliation
   iii). Soil fertility where the forage was grown
   iv). Moisture content of the forage crop
   v). Period taken to fill up the silo
   vi). Use of additives
   vii). Degree of compaction
15. Give two changes that indicates improvement in labour efficiency. (1mk)
   i). High yield
   ii). Maximum utilization of land

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SECTION B (20 MARKS)

Answer all questions in the spaces provided.

16. Study method of farming shown below.

Homestead	Dairy unit
Maize crop farm	Nappier grass

a). Name method of farming shown above. (1mk)

- Mixing farming

b). State three importance of above illustrated method of farming. (3mks)

- No total loss/diversification
- Animals provide feeds to livestock
- Animals provide nutrients to crops.

17. A farmer is advised to apply 200kgs of Nitrogen per Hectare on his 4 ha piece of land of maize. If the fertilizer available is 10:20:0, calculate the quantity of the compound fertilizer the farmer needs. (show your working) (5mks)

10kgs of N = 100kg of compound

200kgs N = ? ✓

$\frac{200 \times 100}{10}$ ✓ = 2000kg

1ha = 2000kg

4 ha = ? ✓

200X40 ✓ = 8000KgS

18. The table below shows the population and gross domestic products of countries A and B.

Country	Gross domestic product (million Kshs.)	Population (millions)
A	2000	40
B	1000	10

a). Calculate the per capita income for each country. Show your working. (2mks)

A. 2000/40 = 50

B. 1000/10 = 100

b). Which of the two countries is more developed economically? (1mk)

B

c). Other than per capita income what other parameters can be used to measure economical development of a counry. (2mks)

i). High National income

ii). High Gross domestic product / GDP

iii). High Gross national product / GNP

19. The following is a farm record of Mr. Wepukhulu as at 30th May 2023. Study it and use it to prepare balance sheet.

Creditors	20,050
Bank loan	40,000
AFC loan	500,000
Coffee worthy	130,000
Tractor	220,000
Bank overdraft	24,500
Cash in bank	31,500

Poultry	200,000
Debtors	90,000
Rent	30,000

Prepare a balance sheet. (6mks)

Wepukhulu's Farm Balance sheet as at 30th May 2023					
Liabilities			Assets		
	Shs	Cts		Shs	Cts
Current Liabilities			Current assets		
Rent	30,000	00	Debtors	90,000	00
Bank overdraft	24,500	00	Cash in bank	31,500	00
Creditors	20,050	00	Poultry	200,000	00
Long term liabilities					
Bank loan	40,000	00	Fixed Assets		
AFC loan	500,000	00	Coffee	130,000	00
Subtotal	614,550	00	Tractor	220,000	00
Net profit	56,950	00			
	671,500	00		671500	00

SECTION C (40 MARKS)

Answer two questions in this section

20. a). Outline Five ways strong wind on the farm affects crop production negatively. (5mks)

- increase the rate of evaporation of moisture from the soil
- Causes lodging in cereals and damage to crops
- Blow away rain bearing clouds
- Increases evapotranspiration rate.
- Increases the spread of pests and diseases
- Destroy farm structures

ii). Give Five effects of biotic factors in crop production (5mks)

- Pests. Reduces yield, spread diseases, increase cost of production.
- Parasites. Spread diseases
- Decomposers. Increases nutrients content of the soil
- Pathogens. Spread diseases
- Predators. Reduce yields
- Pollinators. Causes improved varieties of crops.
- Nitrogen fixing bacteria. Improves level of nitrates in the soil.

b). Explain five farming activities which may encourages soil erosion. (10mks)

- Overstocking leas to overgrazing which destroys ground exposing to agents of soil erosion.
- Over cultivation pulverizes the soil making it easy to detach and carried away.
- Burning destroys vegetation cover and exposes soil to agents of erosion.
- Cultivating soil when too dry destroy river line vegetation and destroys soil structure exposing it to agents of erosion.
- Cultivating soil when too dry soil structure making it easily eroded
- Ploughing up and down the slopes create channels which speed up and increase the erosive power of water.

21. a). State seven advantages of land consolidation (7mks)

- ✓ Good farm planning
- ✓ Rotational programmes can be easily affected.
- ✓ Mechanization is possible because the areas are large
- ✓ Cheaper to register the land
- ✓ It saves on farm operation/saves on farm production.
- ✓ Easy agricultural extension services.
- ✓ Encourages the farmers to invest on land/to carry out long term projects.
- ✓ Ensures proper supervision.
- ✓ Soil conservation and land improvement.
- ✓ Weeds/pests, and disease control is enhanced

b). Outline eight importance of irrigation in crop production. (8mks)

- ✓ Increases crop yields and ensure a steady supply of food throughout the year
- ✓ Maximizes the utilization of resources e.g places where there is fertile soil and no water.
- ✓ Important for reclamation of arid and semi-arid areas.
- ✓ Sources of employment in areas where it is used extensively.
- ✓ Allows production of paddy rice
- ✓ Allows growing of crop in green houses.
- ✓ Facilitates fertigation in crop production
- ✓ Promotes crop production for the export market and therefore contributes to country's revenue.
- ✓ Provides regular and reliable and adequate supply of water in areas with little rainfall/ supplement low rainfall.

c). Explain five ways agroforestry trees seeds should be prepared before planting (5mks)

- ✓ Extraction to remove seeds from pods / fruits
- ✓ Drying to reduce seed moisture content
- ✓ Testing to verify seed purity

- ✓ Treatment to break dormancy/to improve germination.
- ✓ Seed dressing to control pests and diseases.
- ✓ Seed inoculation to improve nitrogen fixation in legumes.

22. a). Describe maize production under the following sub-topics;

i). Land preparation. (4mks)

- ➢ Clear land
- ➢ Do primary cultivation
- ➢ Do secondary cultivation to medium tilth
- ➢ Prepare before onset of rains.
- ➢ Remove all the perennial weeds

ii). Planting (7mks)

- Plant suitable variety / certified seeds.
- Plant at onset of rains / one week to raining time
- Plant at a spacing of 20-30cm to 75-90cm
- Plant at a depth of 2.5cm to 10cm
- Apply DAP/phosphatic fertilizer
- Mix the fertilizer with to avoid scorching effect.
- Use one teaspoonful of DAP per hole
- Plant one or two seeds per hectare.
- Cover seeds with soil.

iii). Harvesting (3mks)

- ONCE STALKS start drying,
- Cut and stook
- Dehusk
- Harvest using hands or combine harvester
- Dry to right moisture content (13-11%)

b). Explain six factors that should be considered when selecting seeds for planting. (6mks)

- ❖ Should be adapted to local ecological conditions
- ❖ Should be healthy
- ❖ Viable / high germination percentage
- ❖ High yielding
- ❖ Pure / free from impurities
- ❖ Correct size
- ❖ Not stored for a long period
- ❖ At correct maturity stage.