KENYA NATIONAL EXAMINATION COUNCIL
REVISION MOCK EXAMS 2016
TOP NATIONAL SCHOOLS

KENYA HIGH SCHOOL

AGRICULTURE

PAPER 1

MARKING SCHEME

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KENYA HIGH SCHOOL KCSE TRIAL AND PRACTICE EXAM 2016

AGRICULTURE

PAPER 1 / 443/1

MARKING SCHEME

1. - Light intensity
   - Light duration
   - Light wavelength (½ ×2 = 1mk)
2. - To transfer land from white settlers to Africans
   - To reduce population pressure in African reserves.
   - To settle former employee of European farmers.
   - To solve unemployment problems.
   - To increase agricultural production through better method of land utilization.
   - To increase production levels achieved by farmer settlers.

   (2× ½ = 1 mk)
3. Pomoculture – Scientific production of fruits
   Oreliculture – Scientific production of vegetables.

   (1 × 2 = 2 mks)
4. - Gradual reduction on frequency and amount of watering.
   - Gradual reduction on shading.
   - Gradual reduction on mulching.

   (2 × ½ mk)
5. - Where land is abundant
   - Where population is sparse
   - Where the number of livestock per unit area is low.
   - Where land is communally owned.

   (1 × 2 = 2 mks)
6. - Decomposers
   - Pollinators
   - Predators.

   (½ × 2 = 1 mk)
7. - Chemicals and fertilizers can be applied together with water
   - Cleans plant leaves
   - Even distribution of water
   - Sprinkled systems easily moved
   - Practicable in slopy areas

   (½ × 4 = 2 mks)
8. - Volume of heap / materials in the pit goes down
   - Materials easily breaks to small pieces when pressed between fingers.
   - Growth of fungi / moulds in manure.
   - Temperatures within the materials goes down.

   (½ ×2 = 1 mk)
9. - Training / educating
   - Crop research
   - credit / loans
   - Banking
   - Farm input supply
   - Marketing

   (½ ×4 = 2 mks)

10. - Where water is to be discharge such as natural water ways.
- Presence of non-erodable ground
- Volume of water to be diverted which determine the size of charnel to be constructed.

11. - Use of ponds
- Use of rock catchment
- Use of weirs and dams
- Use of roof catchment.

(½ ×4=2 mks)

12. - The intended use of the crop
- The cost of pesticide
- The period within which the crop would be used
- Safety of pesticides to the use and environment

(½ ×2 = 1mk)

13. (a) - It is a deliberate use of living organism such as insect, virus bacteria or animal to reduce the population of a target weed.

(1×1=1 mk)

(b) - Saves labour
- it is cheap
- It does not pollute the environment.

(½ ×2 = 1 mk)

14. - Mulching
- Minimum tillage
- earthing up
- Shading

(½ ×2 = 1 mk)

15. - Provides raw materials to industries,
- Provides market for industrial goods
- Provides food
- Provides income.

(½ ×2 = 1 mk)

16. - Faster growth rate
- Leguminous species
- Multi-purpose in nature
- Deep rooted
- Give extra by product e.g timber and fruits
- Nutrious and palatable
- Easily cappicized
- Non-competitive ability with main crop
- Tolerant to drought and floods.

(½ ×3 = 1 ½ mk)

17. Trap crop: growing a crop before the crop to attract a pest and destroy it.

(1 ×1 = 1 mk)

18. - Type of crop
- Level of nutrient in the soil
- Expected yield

- Soil moisture

(½ ×2 = 1 mk)

19. - Land size
- Capital availability
- Level of technology and education
- Market availability. (½ ×2 = 1 mk)

20. - Helps to predict future returns
- Helps to avoid losses by investing more profitable enterprises.
- Acts as a record for future reference
- Helps in decision making
- Helps to acquire Irans and credits
- Pin points efficiency and weaknesses in farm operations.

(½ ×4 = 2 mks)

21. - Maintain moisture content
- Reduction in costs.
- Maintains soil structure
- Reduces root disturbance.

(½ × 4 = 2 mks)

SECTION B

22. (a) Stalk borer/maize stalk borer (Pusseolafusca)

(1 ×1 = 1 mk)

(b) - It bores through maize leaves causing windowing effect
- It bores through maize cobs and stems
- It lowers the quality of maize grains.
- Lowers quantity /yield

(1×2=2 mks)

(c) - Sorghum
- Sugar cane
- Nappier grass

(½ × 2 = 1 mk)

(d) - Destruction / burning of the previous season crop residue / field hygiene.
- Practising closed season
- Crop rotation

(½ ×2 = 1 mk)

23. (a) Elasticity of demand.

$$\frac{\%\,change\,in\,quantity\,demand}{\%\,change\,of\ \ price\,of\ \ commodity}$$ ✓ ½

% change in quantity = $\frac{350-250}{250}\times 100$ = 40%✓ ½

% change in price = $\frac{18-20}{20}\times 100 = \frac{2}{20}\times 100$ = 20%✓ ½

ED = $\frac{40}{20} = 20$ ✓ ½

(2 mks)

(b) Let the quantity demanded when prices change be x.

% change in demand = $\frac{250-x}{250}\times 100 = \frac{500-2x}{5}$ ✓ ½

% change in Price = $\frac{22-20}{20}\times 100 = \frac{2}{20}\times 100 = 10\%$ ✓ ½

ED = $\frac{500-2x}{\frac{5}{10}}\times 100 = 6$ ✓ ½

= $\frac{500-2x}{5} = 60$

500-2x = 300

x = 100kg ✓ ½ (2 mks)

23. - Populations
- Income
- Preference and tests
- Prices and other related goods
- Advertisements
- Beliets
- Perishability (½ ×2 = 1 mk)

24. (a) To compare porosity and water holding capacity of different soils.

(b) G – Sandy soil
H- Loamy soil
J – Clay soil

(½ ×3 = 1 ½ mks)

(c) - Addition of organic manure.
- Use of mulch (1 ×1 = 1 mk)

25. (a) Use pegging by use of ring and pegs.
(Reject pegging)

(1 × 1 = 1 mk)

(b) - To develop a lot of lateral branches forming a wide a plucking table.

(1 ×1 = 1 mk)

26. - cut the ✓young tea / bushes when at 25-30cm back to 15 cm above the ground.
- After regrowth to 60-75cm high force✓the branches to lie at an angle of 30 – 45^{0}C
- Using a ring made of sticks and pegs to hold the ring in position.

(1 ×3 = 3 mks)

SECTION C

26. (a)

Unit of variables	Total output	Marginal product	Average product
0	0	0	0
1	6	6 ✓ ½	6
2	18	12	9
3	33	15	11
4	40	7	10
5	45	5	9
6	48	3	8
7	48	0	6.9
8	40	-8	5

Marginal product = Extra – product above the previous output

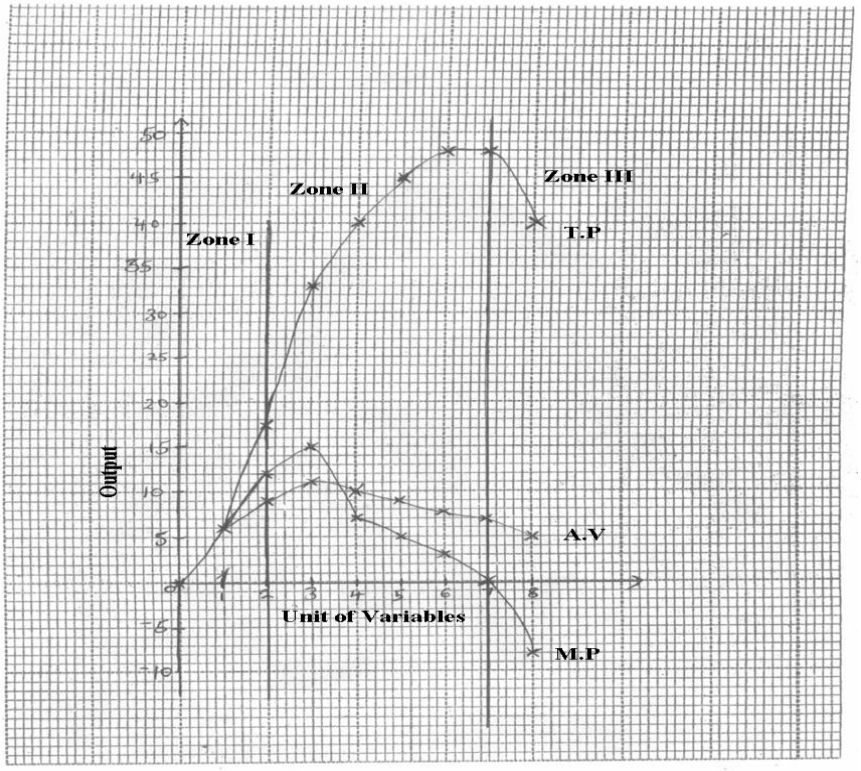
Average product = $\frac{Total\ Output}{Units\ of\ variables}$

(½ × 18 = 9mks)

(b)

26. (c)
- Compare the performance with other enterprises.
- To show history of the farm
- A2 a guide in planning and budgeting of farm operations.
- To detect losses or theft on the farm
- To show whether the farm business is making profit or losses.
- To help in obtaining credit / loan.

(1 × 3 = 3 mks)



Scale = 1

Labelling axes = 1

Plotting 1×3 = 3

Identification = 1×3 =3

8

27. (a)
- Proper / correct spacing
- Mulching
- flooding
- Early planting
- Application of manure and fertilizers
- Crop rotation
- Clean seedbed
- Cover cropping

2×5=10 mk

Naming (1 × 5)

Explanation (1×5)

(b)
- crop root depth
- Crop nutrient requirements
- Weed control
- Pests and disease control
- Soil fertility
- Soil structure

(1 × 6 = 6 mks)

(c)
- Saves time and labour that could otherwise have been used in cultivation

- reduces operational costs involved in seedbed preparation.
- conserves soil moisture
- Maintain soil structure
- Minimizes damage or disturbance to crop roots.
- Helps to preserve soil micro – organisms.
- It minimizes volatilization of certain minerals / nutrients.
- It minimizes soil erosion / pulverization.

(1 × 4 = 4 mks)

28. (a) (i) **Hand preparation**
- Clear the land
- Remove old weeds / underground structures
- Plough the land deeply to a medium tilth.

(ii) **Planning**
- At the onset of this rains
- Make furrows at a spacing of 90 to 100 cm/ planting holes at a spacing of 90 – 100 cm
  between the rows and 50cm between the plants.
- Place cutting in a slanting manner 6:45 degrees
- Apply P205 at rates of 200kg / ha

(1 × 3 = 3 marks)

(iii) **Utilization of Napier grass**
- Harvesting starts after 3-5months from planting and thereafter every 6 – 8 weeks
- Harvesting is done when at about 1.2 – 1.5 m high
- Stems cut at 2.5 – 5.0 cm above soil surface to facilitate fast regrowths.
- Sharp panga used to cut the stem

- Feed directly to animals.
- Chopped into small pieces by use of chuff cutter / sharp Panga.
- Conserved as hay
- Conserved as silage.

(1 × 3 = 3 mks)

(b) Farming practices that may lead to soil erosion.
- Defforestation
- Planting of annual crops on steep slopes
- Clear weeding
- Ploughing up and down the slope.
- Indiscriminate burning of vegetational cover before cultivation.
- Over stocking
- Monocropping

(1 × 5 = 5mks)

(c)
- Type of ownership
- Conditions of ownership
- Date of issue / registration
- Name of owner / identity number of owner
- Size of the land
- Number of title / land parcel number
- Location
- Seal and sign of issueing officer.