

CENTRAL KENYA NATIONAL SCHOOLS JOINT MOCK - 2015
443/1 – AGRICULTURE PAPER 1 – MARKING SCHEME

1. - Tilling of land
- Carrying out construction
- Harvesting of crops
- Handling livestock
- Operating machines
- Marketing of farm produce. (4 x ½ = 2mks)
2. - Planting trees with a high water uptake.
- Use of open ditches.
- Underground drain pipes.
- French drains.
- Cambered beds.
- Pumping (4 x ½ = 2mks)
3. - Attack by bacterial wilt.
- Presence of galls on roots due to attack by Nematodes.
- Attack by moles. (1 x 2 = 2mks)
4. - Rain water leaves the water sheds.
- Flowing water forms channels.
- Water volume increases, wearing the sides of the channels.
- Scouring of the channel floor.
5. (a) Output is maximum / total product increases at a decreasing rate / Resources are utilized to the maximum. (1mk)
(b) A complete budget is prepared when there is a major change in the farm business, a partial budget is prepared when there is a minor change in the farm business. (Mark as a whole) (1mk)
6. (a) - Leaf curling
- Leaf chlorosis
- Premature leaf fall
- Stunted growth
- Scorching of leaf edges

(b) $150 \Rightarrow X$
 $100\text{kg} \Rightarrow 21\text{KgN}$
$$X = \frac{21 \times 150}{100}$$
$$X = 31.5\text{KgN}$$
 (2 x ½ = 1mk)
7. - Vegetative propagation nursery.
- Tree nursery
- Vegetable nursery
8. - Proper method and time of doing things e.g. planting, spacing.
- Use of right type and amount of inputs.
- Applying inputs at the right place.
- Making right occasions based on proper observation.
9. - Bank loans
- Unpaid expenses e.g. water bills.
- Bank overdrafts.
- Creditors.
10. - Mechanization
- Training the workers
- Incentives / motivation to workers

- Supervision
 - Providing better working tools.
 - Fair and prompt payment.
11. - Mulching
- Herbicides
 - Confining cultivation to crop base
 - Uprooting of weeds
12. - To avoid competition for nutrients.
- To prevent pest harbouring.
 - To avoid competition for sunlight / light intensity for plant use.
 - Control disease incidences.
13. - Cooperative
- Communal
14. Its damage caused by pests beyond tolerance.
15. - Large piece of land.
- Land is communally owned.
 - Low population density.
 - Having different pieces of land within a given area.
16. Heads smut.

SECTION B

17. (a) A – Maize weevil
B – Mole
C – Weaver bird
- (b) A – Storage stage
B – Germination stage
- (c) - Reduces yields by eating grains.
- Lowers quality by exposing grain to weather damage.
 - Causes grain fall off.
18. (a) A – Columnar
B – Blocky
C – Prismatic
D – Granular / crumb
- (b) Granular / crumb
- (c) - Good drainage
- Stable against rain / wind
 - Retain enough water.
 - Allow good aeration / porous.
 - Allow even root development.
 - Support high populations of soil organism.
19. (a) L – Compact panicle sorghum
M – Goose-necked sorghum
- (b) M – Goose-necked sorghum.
- (c) Birds find it difficult to feed on the bent panicles / birds cannot perch on it easily.
20. A hybrid is developed by crossing two pure varieties of maize under controlled pollinations; a composite is obtained by growing of several varieties of diverse genetic composition and allowing them to freely inter pollinate. (Mark as a whole) (1x1 = 1mk)
21. (a) Presence of underground Rhizomes.
- (b) Underground bulbs.
- (c) Presence of thorns that cause irritation.

SECTION C

22. (i) Terraces – are man made structures constructed across a slope to reduce soil erosion.
 Trash lines – vegetative materials arranged between rows of crops along contours to slow surface run-off and trap soil.
 Stone lines – stones are arranged in lines across the slope to slow surface run off and trap eroded soil.
 Bunds – made by heaping soil across the slope to form barriers that reduce soil erosion.
 Porous dams / Gabions – constructed across a gully that allow water to filter through but traps eroded soil.
- (ii) Soil fertility – fertile soils spacing is closer while it is wider in poor soils.
 Size of the plant – tall plants varieties require wider spacing than short varieties.
 Moisture content – areas with adequate moisture, spacing can be narrow.
 Mechanization – mechanized form require wider spacing to allow movement of machines.
 Growth habits – crops that spread require wider spacing while those that do not spread require narrow spacing. **NB:** Stating – 1mk, Explanation – 1mk
23. (a) - Timely planting – early planted crops escape pest attack than late planted ones.
 - Timely harvesting – enables crop to escape attack by some storage pests e.g. grain weevils.
 - Proper tillage – exposes pests which are soil borne to predators e.g. birds / scorched by sun.
 - Closed season – a period when a susceptible crop is not grown in order to control a certain pest or group of pests.
 - Trap cropping – A crop planted before or together with the main crop for attracting pests. The pest is then killed by other means e.g. spraying.
 - Crop rotation – crops preferred by pests are rotated with crops not preferred. This starves the pests to death.
 - Planting resistant crop varieties – They have natural protective mechanisms against pest attack.
 - Field hygiene – keeping the field free from any plant materials harbouring pests.
 - Alteration of environmental condition – creating micro-climates that are not conducive to some pests.
 - Crop nutrition – application of fertilizers and manures makes crops to grow strong and able to resist and escape pest attack.
 - Destruction of alternative hosts – removal of weeds that act as alternate hosts to crop pests reduce pest infestation.
 - Use of clean planting materials – prevents introduction and spreading of crop pests.
 - Proper spacing – makes it difficult for pests to move from one plant to another.
 - Use of organic manure – discourages eelworms.
 - Irrigation – overhead irrigation to control aphids.
 - Chemical control – use of pesticides to alter the conditions favourable for survival of pests.
- (b) (i) - Clear the land.
 - Flood the land four days before primary tillage to soften the soil.
 - Plough the land using a rotavator.
 - Harrow to a fine tilth.
 - Level the land.
 - Construct bunds and levees.
 - Create inlet and outlet channels.
 - Flood the field
 - Drag a leveling board to produce fine mud.
- (ii) - Flood 7.5 - 10cm above the soil surface.
 - Leave the field flooded for 4 days before primary ploughing.
 - Increase water gradient with increased height.
 - Carry out weeding and repair dykes to reduce water loss.
 - Ensure water flows slowly in the field.
 - Change water after every 2-3 weeks.
 - Drain the field 2 – 3 weeks before harvesting.

- (iii) - Regulate water temperature.
- Highly toxic substances are leached.

24. (a)

Marginal Revenue	Marginal cost	Net revenue
28,000	5,600	22,400
50,000	5,600	103,200
34,000	5,600	13,600
18,000	5,600	144,000
2,000	5,600	

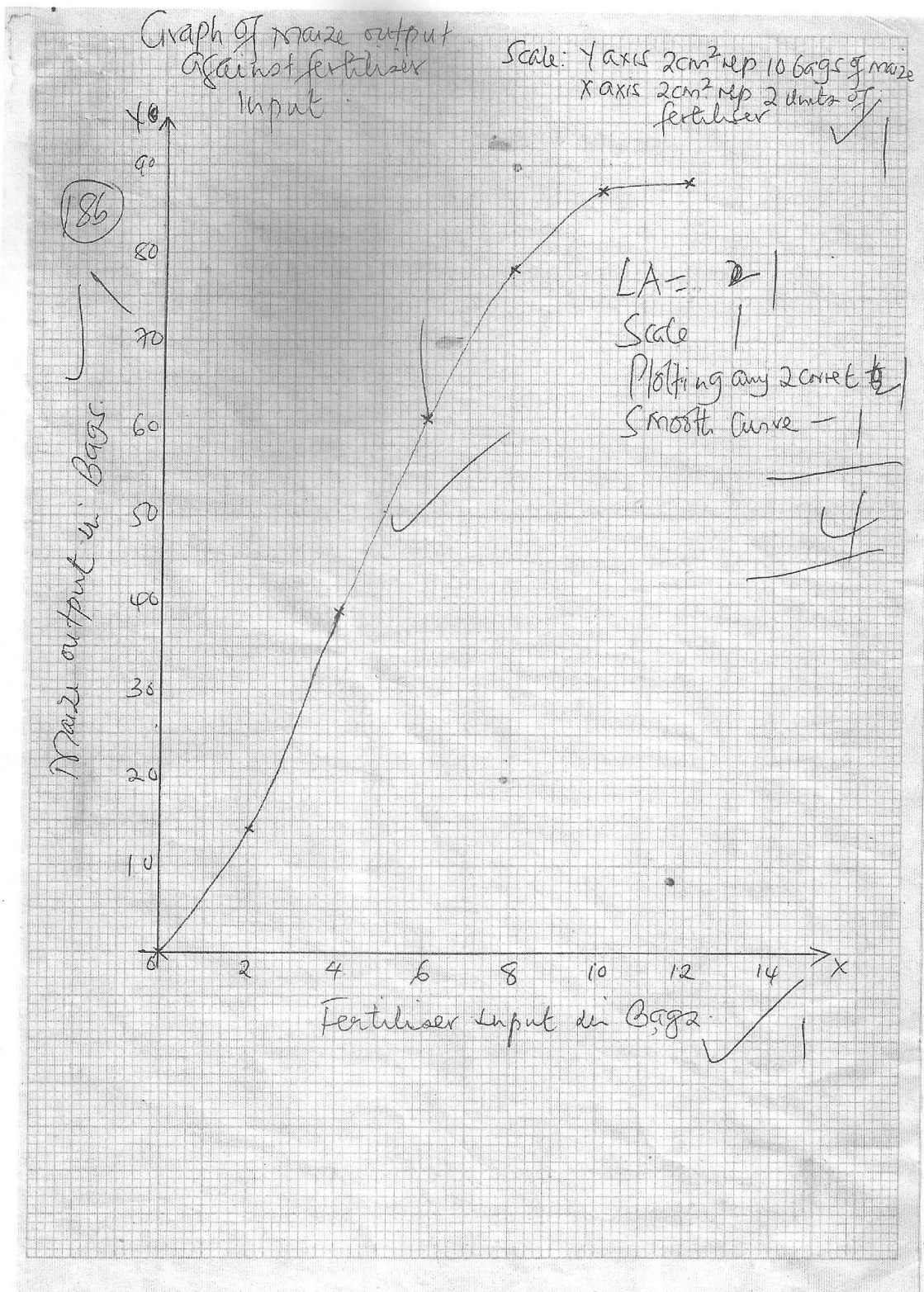
4 x 1/2 = 7 marks)

Agriculture Paper IMS

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Cekenas Joint Mock

(b) (i) - On graph paper



- (c) Level 3 – 26 bags
Level 9 – 83 bags
= 2mks) (2x1
- (d) Level – 10 units of fertilizer (input)
Reason – Highest net revenue (2x1 = 2mks)
- (e) It is the degree of responsiveness of demand to price changes. (1 x 1 = 1mk)
- (f) - Availability of substitute commodity.
- Degree of necessity
- Number of users
- Time lag
- Time span
- Promotion / Advertisements (4x1 = 4mks)

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443/2 – AGRICULTURE PAPER 2 –MARKING SCHEME

- | | | | |
|----------------------|--|-----------------------------|--------|
| 1. <u>Landrace</u> | | <u>Large white</u> | |
| - Has straight snout | | Broad slightly dished snout | |
| - Drooping ears | | Erect ears | (2mks) |
2. (a) Blackquarter / Blackleg (1/2mk)
(b) Blanthrax (2mks)
3. (a) Acarive
(b) American fowl brood (2mks)
4. California
- White with black parts on the body, ears, nose, paws and tails. (2mks)
5. (a) Oxytoxin – Brings about milk let down. (1mk)
(b) Stilboestral – For caponization. (1mk)
6. - Nile perch
- Trout
- Tilapia
- Catfish / mud fish (2mks)
7. - Bucket feeding
- Natural feeding
- Bottle feeding (1 1/2mks)
8. - Easy to harvest.
- Honey is free from contamination.
- Top bars can be removed to inspect combs and be replaced without problems.
- Cheap to construct. (2mks)
9. - Clean milkman
- Clean milking herd
- Healthy milking herd (2 x 1/2)
10. - Avoid cannibalism
- Avoid egg-eating
- Avoid toe pecking
- Avoid feather plucking
11. - Fencing around the pond.
- Putting up a net above the pond. (1x1)
12. - Crutching - cutting of wool around the vulva the vulva of ewe to facilitate mating.
- Ringing is cutting wool around the sheath of a ram to facilitate mating. (1mk) (mark as whole)
- | | | | |
|-----------------|--|-------------|--|
| 13. - Bacterian | | - Promedary | |
| - 2 humps | | - 1 hump | |
| - more fur | | - less fur | |
14. - Orally
- Cloaca

- Inhalation
- Injection

15. - Proper feeding

- Debeaking
- Feeding birds with oyster shells.
- Dim light in laying boxes.
- Hanging green vegetable material.
- Scattering grains on the floor.
- Enough laying boxes.

16. - Types of feed

- Size of the animal
- Age of the animal
- Species of animal
- Breed of animal
- Level of production
- Ambient temperatures

17. – Cleanliness

- Size
- Colour
- Candling quality

18. - Species of animal

- Age
- Colour
- Breed of animal
- Size of herd

19. (a) Ability of an animal to resist disease. (1mk)

- (b) - Nutritional causes
- Physical causes
 - Chemical causes
 - Living organisms

20. - Plunge dip / Machakos dip

- Crush
- Spray race

21. (a) - Lack of calcium carbonate

- New cattle disease

(b) - Fertile

- No cracks
- Medium size
- Oval in shape
- No double York
- No blood stain
- No meat spots

SECTION B

22. (a) A – Pipe wrench

- B – Adjustable spanner

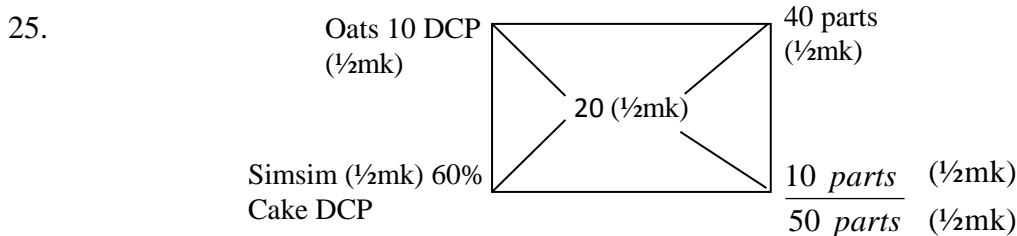
C – Ring spanner

- (b) B can be used on nuts and bolts of different sizes (reject any size) while a can only used only on specific size.
- (c) Holding pipes or loosening them during plumbing.
- (d) Opening or closing the jaws to enable it open or tighten nuts of different sizes.

23. (a) A – Too cold / low heat.
 B – Too hot
 C – Draught (Rej. drought)

- (b) Reduce the number of heat sources.
 - Use of low voltage bulbs.
 - Lowering the wick if lanterns are used.

24. (a) Milk fever
 (b) Low calcium level in the blood.
 (c) Intravenous injection; with calcium and bolglucomate.



$$\text{Oats} = \frac{40}{50} \times 100 \text{ (½mk)} = 80\text{kgs (½mk)}$$

$$\text{Simsim} = \frac{10}{50} \times 100 \text{ (½mk)} = 20\text{kgs (½mk)}$$

26. Lawn mowers e.g. mowers
 Chain saws
 Water pumps

SECTION C

27. (a) - Clean and disinfect the following pen.
- Wash / clean and disinfect the sow.
 - Control external parasites.
 - Move sow to farrowing pen (3 days before farrowing)
 - Provide a creep area.
 - Provide cleaning beddings for the sow.
 - Provide bran to sow after farrowing.
 - Ensure piglets are suckling.
 - Ensure piglets are breathing.
 - Weigh the piglets.
 - Dispose after birth.
 - Dispose off born still piglets.

(1x12)

- (b) Old age – cull the old
 Health of boar – cull frequently sick.
 Injury – cull seriously injured and unable to mate.
 Inbreeding – cull when daughters are used as replacement stock.

Size – cull when too heavy to mate.

Fertility – cull the infertile boars

(1 x 5)

(c) - Clean after use

- Straighten bent pongs
- Tighten loose handle
- Replace broken handle

(1x3)

28. (a) THE CLUTCH

- It connects and disconnects the drive shaft to or from the engine.
- Facilitates smooth and gradual take off.
- Provide power from engine or P.T.O.

THE GEAR BOX

- Select forward or reverse gear.
- Adjust speed of drive from engine to be applied appropriately.
- To stop the vehicle without stopping the engine.

THE DIFFERENTIAL

- Change the direction of drive.
- Moderation motion speed as opposed to engine speed.
- Enables rear wheels to rotate independently.

FINAL DRIVE

- Move the vehicle forward and backward.
- Absorbs shock since wheels are inflated.

(5x1)

- (b) a) Inspect steering and gear box oil and top up if necessary.
- b) Change engine oil by complete draining and replace with fresh oil.
- c) Check differential oil – top up when necessary.
- d) Replace or dust off air cleaner when necessary.
- e) Check oil in the air cleaner and change if it is dirty
- f) Remove large sediments from sediment tool.

29. (a) - Well ventilated
- Leak proof roof.
 - Well lit
 - Drought free
 - Well drained floor
 - Spacious
 - Easy to clean
 - Strong enough

(6x1)

- (b) - Provide security against thieves and predators.
- Enables paddocking / rotational greasing / mixed farming.
- Controls parasites and diseases by keeping away foreign animals.
- Shows boundaries between farms
- Acts as wind breakers.
- Improves aesthetic values.
- Helps to conserve soil and water.
- Some Hedgers are used as livestock fodder / fruits / firewood provider / privacy.
- Enables isolation of animals for different purposes.

(8x1)

- (c) - Prevailing direction of wind.

- Soil type
- Security of structure
- Accessibility
- Locomotion in relation to existing structure
- Topography / drainage of area
- Local government regulation / Government policy
- Purpose of structure
- Space availability for future expansion.
- Direction / position of sun.
- Nearness to social amenities – roads
- Farmers' tastes and preferences.