

KABONDO DIVISION JOINT EVALUATION TEST

443/1

AGRICULTURE PAPER 1

MARCH/APRIL 2015

MARKING SCHEME

SECTION A

1. Is where farmers move with their livestock from place to place in search of pasture and water
($\frac{1}{2}$ mks)
2. To control weeds
Control pests and diseases
To ease planting
To aerate soil
Incorporate organic matter
Enhance water infiltration
Any (4x $\frac{1}{2}$)
3. They are richer in nutrients
They also fix nitrogen into the soil
Any (2x $\frac{1}{2}$)
4. Liming
Application of alkaline fertilizer
Any (2x $\frac{1}{2}$)
5. Transmit crop diseases
Destroy crop parts thus interfere with yield
Reduce the quality of produce
Any (2x $\frac{1}{2}$)
6. As silage
Fresh fodder
Any (2x $\frac{1}{2}$)
7. Stunted growth
Yellow of leaves (chlorosis)
Premature drying and falling of leaves
Anthocyanin (purple colouration) formation on leaves may occur
Any (3x $\frac{1}{2}$)
8. Amount of water available
Type of soil
Type of crop to be irrigated
Gradient of the land
Capital available
Any (4x $\frac{1}{2}$)
9. Higher production as less energy is wasted
Fodder is not wasted
Pests and diseases risks reduced
Less land is required
Any (4x $\frac{1}{2}$)

10. Adaptability to the ecological conditions
Free from pests and diseases/certifield seeds
High yielding
Purity Any (4x¹/₂)
11. Duration of drying
Weather condition during preparation
Species of forage used
Condition of storage Any (4x¹/₂)
12. Reduces evaporation by shading and reducing wind speed
Holds soil particles
Increases humus by shading n leaves
Controls wind erosion by acting as windbreak
Reduces raindrop erosion by intercepting the rain drop
Reduces erosion by reducing the speed of run off
Any (4x¹/₂)
13. A. Testing mastitis during milking (1/2)
B. Rivetting, shaping metals (1/2)
14. Early planting
Proper seed bed preparation
Crop rotaion
Proper spacing
Clean planting material Any (2x¹/₂)
15. Regular breeder
Good forager
Early maturity
Fast growth/Good feed conversation
High killing out percentage Any (4x¹/₂)
16. Roof catchment
Wells Boreholes
Use of dams
Use of dams
Use of weirs
Rock catchment
Microcatchment Any (4x¹/₂)
17. Control pests and diseases
Balanced use of soil nutrients
Control weeds
Increases soil structure when legumes are included
Improves soil structure when grass leys are included
Any (4x¹/₂)
18. Timing of application to vulnerable post stage
Concentration
Weather condition at time of immediate rainfall
Persistence of the pesticides Any (4x¹/₂)

- Proper spacing- helps to control diseases as groundnuts resettle by discouraging multiplication of the disease vectors aphids
- Early planting to enable the crop pass its young susceptible stage before pathogens multiply
- Proper crop nutrients to avoid deficiency diseases and enable crop resist diseases

Any six explained x 2

- B. Time wasted in moving from one parcel to another by workers and the farmer
- -Proper and effective control of pests and weeds due to the effect the other surrounding plots when such management activities may be neglected
- Difficult in farm planning as the farmers are scattered while belonging to the same farmer
- Difficult in carrying out soil conservation measures since the scattered parcel are small, the conservation structure will take larger part of the parcel. Also effective control without cooperation of neighboring farms is difficult
- Difficult by extension officers to move from one parcel to another
- Shape and size of the parcel makes it difficult for controlled grazing leading to overstocking and land denudation.

Any explained 4 x 2

25. Change of soil PH Nutrients element are available for crops only within certain PH ranges may occur due to continuous use of acidic or alkaline fertilizers

- Leaching _Is where infiltrating water carry the soluble nutrients to lower levels beyond the reach of crop roots
- Soil erosion____
 - .Removal of top fertile soil by wind or water leaves behind infertile soil
- Monocropping____The crop uses and exhaust particular nutrients
The crop only uses the nutrients at certain depth
Leads to building of pests and diseases
- Continuous cropping
The crops continuous take away soil nutrients at a rate that is not replenished
- Burning of vegetation cover
This destroys organic matter and hence soil structure
The soil micro-organism that have beneficial roles are destroyed
The soil becomes bare and more susceptible to agents of erosion.
- Accumulation of salts or salinization
The dissolved mineral in soil water are kept low in top soil by continuous washing away to deeper layers by rainfall .In arid areas where evaporation is high the minerals are brought to top soil and water evaporates\

Any explained 5 x 2

B. Proper drying of grains helps avoid pest attack, rotting fungal attack and fire outbreak when temperatures rise due to fermentation

Proper cleaning of store before storage to reduce pests

Proper construction of the store i.e. vermin proof ,well ventilated leak proof

Dusting to control storage pests using suitable chemicals powders

Keeping the surrounding clean by cleaning vegetation to keep away vermin

Any explained 5 x 2

26. A. To regulate bearing to get equal cropping in two seasons of the year
To remove old unproductive branches that may only harbor diseases
To regulate the height for picking. Is done by capping or pruning terminal buds
To open up the plant by removing extra branches that creates micro climate suitable for pests and diseases
To open up the plant for spray penetration used to control pests and diseases
For economic use of chemicals when unwanted parts are removed before spraying

B. Production of kales

➤ Transplanting

Any explained 4 x 1

- Seedlings are ready for transplanting at one month
- Water the nursery bed before
- Select healthy vigorously growing seedlings
- Left with a ball of soil around the roots using garden trowel
- Plant in holes dug 60 cm x 60 cm and 10 cm deep and cover to same depth as was in the nursery and firm around the base
- Transplant in the morning or evening when the weather is cool
- Well rotten manure is used in planting hole suitable fertilizer e.g DAP may be used at a rate of tea spoonful per hole.
- Water twice daily for some days shading may be done

➤ Weed control

Any explained 2 x 2

- Annual and perennial weeds should be properly controlled before transplanting in the main field
- The field should be kept free from weeds through out by shallow digging
- Care should be taken not to destroy the crops

➤ Pest and Diseases control

➤

- Aphid's suck plants sap to cause water stress during dry seasons while also competing for nutrients
 - Are controlled by overhead irrigation and uses of suitable insecticides
- Cut worms — They cut the seedlings around the ground level
 - Control by applying suitable insecticides during transplanting
- Damping off
 - Caused by fungi that affects seedlings in nursery when there is heavy watering and shading
- Black mass of fungi forms a ring around the base of the plant that will cause withering and death
- Control by reducing shade, thinning and application of suitable fungicides e.g copper fungicides
- Black rot — Affects the PH when the stem is cut black ring bacterial is seen

- Controlled by crop rotation

Downy mildew

Fungal diseases that affects the leaves

Controlled by appropriate fungicides

0020C.

- . Amount and intensity of rainfall
- Topography /slope of the land
- The type of the soil
- Soil depth
- Vegetation cover
- Overstocking
- Deforestation
- Cultivation of animals crops on steep slopes
- Clean weeding
- Burning of vegetation before cultivation
 - Any explained 5 x 1

KABONDO DIVISION JOINT EVALUATION TEST

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AGRICULTURE PAPER 2

MARCH/APRIL 2015

MARKING SCHEME

- 1
 - Saanen
 - Toggen burg
 - Anglo-Nubian
 - Jamnapari
 - British Alpine ($\frac{1}{2} \times 3 = 1 \frac{1}{2}$ mks)

- 2
 - a) A Practice of flitting the rams with breeding chutes which are painted in different colours during breeding/application of coloured dye on the brisket of the rams during breeding,(1mk)

 - b) Reasons for raddling
 - Helps to identify ewes that have been served by individual/specific ram.
 - Helps to identify ewes and rams which are infertile
 - Helps to identify active rams. ($\frac{1}{2} \times 2 = 1$ mk)

- 3
 - It is possible to compare animals with different age group since heifer locations are Used
 - It eliminates difference brought about by the environment since average performance of the herd is used.
 - It is possible to make direct comparison of bulls and different artificial insemination centres since the environmental differences are removed.
 - It is accurate method that can be used accurately in large herds of animals.
 - ($1 \times \frac{1}{2} = 1 \frac{1}{2}$ mks)

- 4
 - Does not require skilled worker as compared to engine power.
 - Animals are cheaper to buy and maintain
 - Work output from animals is higher than that of human beings.
 - Animals can work in areas where tractors cannot.
 - Animals work better on small holding than tractors.($4 \times \frac{1}{2} = 2 \frac{1}{2}$)

- 5
 - Highly palatable
 - Highly digestible
 - Rich in protein/high in nutrients

- 6
 - To prevent moisture from rising up
 - To prevent coldness from ascending to the floor surface.
 - To control termites from rising up and damaging the floor. ($\frac{1}{2} \times 2 = 1$ mk)

- 7
- Tilapia
 - Carps
 - Black bass
 - Cat fish
 - Blue gill
 - Nile perch ($3 \times \frac{1}{2} = 1 \frac{1}{2}$)
- 8
- a)
- It brings loss of hybrid vigour
 - May lead to decline in fertility which leads to species extinctions.
 - Proving about reaction in performance
 - Leads to high rates of parental mortality ($\frac{1}{2} \times 3 = 1 \frac{1}{2}$ mks)
- b)
- It is possible to implant embryo from a high quality female to less valuable female hence improve performance of offspring.
 - It stimulates milk production in a female that was not ready to produce milk.
 - A highly productive female can be spread over a large area to benefit many females.
 - It is easy to transport embryo in test tubes than the whole animal.
 - Embryos can be stored for long period awaiting availability of recipient female ($3 \times \frac{1}{2} = 1 \frac{1}{2}$ mks)
- 9
- Inflicting pain to the animal beating the animal
 - Presence of strangers and animals eg dogs
 - Poor milking techniques.
 - Absence of the calf when the cow is milked in case the cow is used to the calf.
($\frac{1}{2} \times 2 = 1$ mk)
- 10
- a)
- Flushing is the giving of highly nutritious feed/high plane of nutrition to female animals 3-4 weeks to and after mating while steaming up is giving of extra nutrients feed to an animal 4-8 weeks to parturition ($1 \times 2 = 2$ mks)
- b)
- High fibre content
 - Low protein content
 - High moisture content
 - High carbohydrate content ($\frac{1}{2} \times 3 = 1 \frac{1}{2}$ mks)
- 11
- They are simple in construction.
 - They have fins and a fan blade which assists the circulation.
 - They are light in weight for they have no radiators and water jackets. ($\frac{1}{2} \times 2 = 1$ mk)
- 12
- Immunity it produces should be as good as natural immunity.
 - Should have a long keeping live that is its shelf life should be longer.
 - Should be easy to administer
 - Should have no side effect when inoculated.
 - Should be compatible with the other vaccines given to the animal
 - A single dose should produce life long immunity ($\frac{1}{2} \times 2 = 1$ mk)

- 13
- Poor health
 - Age/old
 - Poor production
 - Physical deformities
 - Have hereditary defects.
 - Not capable of producing young ones.
 - To avoid inbreeding
 - Poor mothering ability
 - Poor temperament ($\frac{1}{2} \times 5 = 2 \frac{1}{2}$ mks)
- 14
- Prevent the cow from eating the placenta because it will encourage the sow eat the piglets often.
 - If left it will decompose and become source of infection. ($\frac{1}{2} \times 2 = 1$ mk)
- 15
- Shortage of food and water in their surroundings
 - Outbreak of diseases and parasites.
 - Dampness and bad smell
 - Sick/infertile queen/death of queen.
 - Overcrowding
 - Urge to establish a new colony ($\frac{1}{2} \times 4 = 2$ mks)
- 16
- Sap displacement method
 - Pressure/vacuum treatment
 - Hot and / cold soaking ($\frac{1}{2} \times 2 = 1$ mk)
- 17
- Protect the female livestock from predators
 - Help in control of livestock diseases and parasites
 - They provide shelter against extreme weather conditions
 - They provide storage of farm produce and variable inputs.
 - They increase the efficiency of production and management in the farm.
 - ($\frac{1}{2} \times 4 = 2$ mks)
- 18
- Dusting the poultry house and laying nets with appropriate insecticides(pyrethrin)
 - Ensuring high standards of cleanliness
 - Dusting birds with appropriate insecticides
 - Applying petroleum jelly on infected parts. ($\frac{1}{2} \times 2 = 1$ mk)
- 19
- A-Docking
 - B-Hoof trimming
 - C-Notching.($\frac{1}{2} \times 3 = 1 \frac{1}{2}$ mks)
- b)
- Facilitate easy mating/tupping
 - To give good and even distribution of fats throughout the body.
 - Avoid soiling feaces which attracts blow flies.
 - Achieve uniformity in appearance of sheep. ($\frac{1}{2} \times 3 = 1 \frac{1}{2}$ mks)
- c)
- B-Hoof trimmer/scapel/knife/razor blade
 - C-Ear Notcher ($\frac{1}{2} \times 2 = 1$ mk)
- 20
- i) Disc plough (1mk)

- ii) E-Beam
F-Depth/furrow wheat
G-Disk blade
H-Scraper ($\frac{1}{2} \times 4 = 2$ mks)
 - iii) -Adjusting by raising the depth wheel
-Adjusting the angle of the disc
-Lengthening the top link
-Adding weight to the plough beam. ($1 \times 3 = 3$ mks)
- 21
- i) Q-Crop
R-Proventriculus
S-Gizzard ($\frac{1}{2} \times 3 = 1$ mk)
 - ii) Q-Stores and moistens food
R-Production of enzymes pepsin/mixing the food with enzymes pepsin
($1 \times 2 = 2$ mks)
 - iii) Characteristics of part S.
-Walls are aligned with muscles which are able to rotate/walls aligned with muscles that slide.
-Contains grit or small sand stones which aid in crushing or grinding of food particles. ($1 \times 2 = 2$ mks)
- 22
- K-Swarm net
L-Roof
M-Kenya top bar hive
N-Catcher box/syrup/sucrose container ($\frac{1}{2} \times 2 = 1$ mk)
 - b) -Method of extraction
-Season of the year.Honey formed over dry season tends of lower quality.
-Maturity age of the honey.Mature honey is of good quality. (2mks)
 - c) -Ants
-Wax moth
-Bee houses
-Honey badgens ($\frac{1}{2} \times 2 = 1$ mk)

SECTION C

- 23 a) Characteristics of eggs selected for incubation.
- Be fertilized
 - Medium sized (50-60g) in weight
 - Have smooth shells
 - Oval in shape
 - Free of any crack in the shells
 - Clean/pores open
 - No abnormalities/blood spots/meat spots/double yolk.
 - Fresh/week old (5x1=5mks)
- b) **Factor affecting quality of honey**
- Type of the plants nectar was obtained
 - Maturity stage of the honey
 - Method of processing honey
 - Time of harvesting honey (5 x 1 = 5mks)
- c) **Management of growers from 9th week to the point of lay**
- Space adequate for number kept 0.3-0.5m/ per 3 birds
 - Adequate roosts,perches,feeders and waterers
 - Litter kept dry,free from dust/avoid dampness.
 - Provide plenty of clean water.
 - Control parasites and diseases
 - Supply greens/vitamins/green vegetations.
 - Provide grit/oyster shells (10 x1=10mks)
 - Introduce layers mash
 - Isolate and treat sick birds
 - Provide grains
- 24 a) **Functions of rumen**
- Temporary storage of food
 - Fermentation of food
 - Synthesis of vitamin B and K
 - Synthesis of amino-acids from ammonia gas
 - Breakdown of proteins to peptides,amino acids and ammonia.
 - Breakdown of carbohydrates and cellulose.
 - Absorption of CO₂.And hydrogen gas.
 - Recycling ammonia to saliva,alkaline saliva.
- b) **Digestion of grass the Rumen**
- Part of cellulose and other carbohydrates undergo microbial fermentation,facilitated by micro-organisms;process producing volatile fatty acids;which are absorbed directly across the ruminal wall into the blood stream.Proteins are digested into amino-acids;and incorporated into microbial protein.Amino is used to synthesize amino acids.Ruminal microbes synthesize vitamin K and B-complex.
- c) **Reasons for riddling in sheep**
- Helps identify served ewes and by which ram
 - To know the sire of each ram
 - Identify ewes with repeated heat signs.

25 **Components parts of a plunge dip for cattle.**

- Animal holding yard-holding animals before dipping
- Foot bath-providing grip and removing mud from hooves.
- Jump-narrow entrance to dip tank,enable animals to jump singly.
- Dip tank-hold volumes of acaricides for immersion
- Drying yard-hold animals before release to posture.Prevent siltation of dip tank
- Silt trap outlet-trap mud and dung/prevent siltation of dip tank.
- Dip tank shelter/roof-prevent evaporation/dilution of dip wash
- Water tank-store water for dipping purposes.
- Waste pit-dumping site for sediments.