

BURETI SUB-COUNTY JOINT EVALUATION TEST**443/1****AGRICULTURE****Marking scheme**

1.
 - production of one crop
 - practised in large scale farming. *1 mark*
2.
 - leaching
 - plant uptake
 - volatilization / burning *1½ marks*
3.
 - Biting and chewing
 - Piercing and sucking. *1 mark*
4.
 - Land consolidation
 - land adjudication and registration
 - Land settlement and resettlement.
 - Tenancy reform
 - Redistribution of land/ land subdivision
 - Improved land legislation *2 marks*
5.
 - Most of the crop used are food crops.
 - Green manure crops use most of the soil moisture leaving little for the next crop
 - Most nutrients are used by micro-organisms in the process of decomposing the green manure.
 - It delays planting as it takes time for green manure crop to decompose. *2 marks*
6.
 - Rainfall patter/ reliability
 - Variety of beans
 - Incidence of pest and diseases attack
 - Expected harvesting time *1 mark*
7.
 - Thinning
 - Gapping *1 mark*
8.
 - Establishing cover crop.
 - Use of herbicides to control weeds.
 - Use of mulch on the surface.
 - Timing cultivation
 - Restricting cultivation to the area where seeds are to be planted.
 - Uprooting /slashing weeds. *2 marks*
9.
 - Muster roll
 - Labour utilization analysis *1 mark*
10.
 - Broadcasting
 - Foliar application
 - Side/ row / basal application
 - Fertigation
 - Hole placement / drilling
 - Drip *2 marks*
11.
 - a) Is the value of foregone best alternative / revenue forgone because of choosing the best alternative. *1 mark*
 - b) Raw material used up in the process of production e.g. seeds, fuel, fertilizer feeds. (OWTTE if examples are included) *1 mark*
12.
 - Thorn apple / Datura stramonium
 - Sodium apple / Solanuminclanum *1 mark*
- b)
 - Mexican marigold / Tagetes minutta *1 mark*

- Decompose organic matters
 - Help to aerate the soil
 - Convert atmospheric nitrogen to nitrate
 - Upon death and decay release plant nutrients. *2 marks*
- 14.
- Removal of the shade.
 - Reduce the frequency of watering.
 - Reduce the amount of water. *1 mark*
15. Intensive hedgerow trees or shrubs are planted between rows of crops while Border planting - trees or shrubs are planted on the borders of the farm. (Mark as a whole) *2 marks*
- 16.
- Topdress / apply manure.
 - Control weed.
 - Practice controlled grazing to avoid denudation.
 - Cutting back dry and unpalatable parts.
 - Re-seeding when necessary.
 - Irrigation when necessary
 - Control pest and diseases. *1½ marks*
17. a)
- Journal
 - Cash book
 - Ledger
 - Inventory *2 marks*
- b)
- Training labour force.
 - Mechanizing operations.
 - Giving incentives e.g. housing.
 - Supervision of labour.
 - Assign specific tasks to workers.
- 18.
- i) staking *1 mark*
- ii) Blossom end rot *1 mark*
- iii)
- Too much nitrogen in early stages of growth.
 - Irregular or infrequent watering.
 - Calcium deficiency in young fruits. *3 marks*
- iv)
- Enhances production of clean fruits.
 - Helps in controlling diseases.
 - Facilities management practices (accept any specific practice (harvesting / weeding / pruning)
 - Prevent infestation by soil born pests. *2 marks*
- 19.
- i) T - budding / Budding.
- ii)
- Help to exclude water and air
 - To make tight contact between the bud and rootstock (accept any two correct answers) *2 marks*
- iii) Rootstock *1 mark*
- iv) Citrus (accept specific crop e.g. oranges, lemons, tangerines) *1 mark*
- 20.
- a) C - Black jack
- D - oxalis *2 marks*
- b) Broad leaved weed. *1 mark*
- c) Presence of underground bulb. *1 mark*
21. a)
- i) At the end of the third unit fertilizer application / 3 *1 mark*
- ii) This is the cost profitable unit of fertilizer application, beyond which there would be a loss. *1 mark*

iii) $MR = \text{Shs } 1200 \times 2 = 2400 \text{ /}=\text{}$

1 mark

- b) States that if successive units of one input are added to fixed units of other inputs a point is eventually reached where additional output per additional unit of input will decline.

1 mark

Section C

22. a)

- Increase incidences of some pests/ parasites and diseases.
- Improves quality of certain crops e.g. fruits.
- Lower quality of certain crops e.g. pyrethrum.
- Increase rate of evapotranspiration / causes wilting.
- Increase rate of maturity / hasten maturity.
- Limit distribution of exotic livestock breeds.

5 × 1 = 5 marks

b)

- Nitrogen fixing bacteria - convert atmospheric nitrogen to nitrates for plant uptake.
- Pollinators - transfer pollen grains from the another of a flower to stigma to bring variation.
- Decomposers - breakdown organic plant and animal remains to release nutrient for plants.
- Pests - attack crops by eating plant parts; / piercing and sucking sap and introducing spread disease causing micro-organisms to crops.
- Pathogens - they cause crop disease.
- Predators - reduce pest population.

5 × 1 = 5 marks

c)

i) Seedbed preparation (2 marks)

- Land is prepared early during the dry season.
- Vegetation is cleared and all stumps should be removed.
- Primary cultivation is then carried out and all perennial weeds are removed.
- It is followed by secondary cultivation Land.
- Is harrowed to produce a medium tilth
- Furrows are made at a spacing of 90 - 100cm
- Alternatively, holes can be dug at a spacing of 90 - 100cm between the rows and 50cm between the plants.

any (5 × 1) = 5 marks

ii)

- Stem cutting or splits are used.
- Planting should be done at the onset of the rains.
- Stem cutting should be placed in the furrows or planting holes in a slanting manner.
- A compound fertilizer such as NPK 20 - 20 - 0 is applied.
- Should be applied at a rate of 200kg /ha at a planting hole or furrow.
- Two nodes should be covered underground and one node should remain above the ground.
- Planting material should come from a healthy and mature plant

23.

- Storage - lack of storage facilities to handle perishable / large quantities at harvesting time.
- Seasonability - Agriculture production is seasonal in nature. Abundant during harvest time and scarce in dry season.
- Perishability - loose quality rapidly, so need to be sold immediately, or processed or put in special storage facilities.
- Lack of market information - lack technical knowledge accessing market information.
- Poor infrastructure - face problem of delivering produce to the market because of poor roads in some areas. produce get spoilt in transit before reaching the market.
- Change in the market demand time between making decisions to produce and when products are realised is long and within the period changes may occur in consumer's tastes and preference.
- Bulkiness - most are bulky thus they require a lot of space for storage and transporting which increase production cost.
- Competition from cheap imports - Similar produce imported into the country at cheaper prices can complete with locally produced products hence market problem.
- Delayed payments - This reduces the morale of farmers.
- Fluctuation in prices - change in supply brought about by over production with cause price to fluctuate.

any (10 × 1) = 10 marks

b)

- Control of pests - prevent spread of pathogen.
- Destruction of crop residue - kill the pest and pathogens.
- Pruning ; creates unfavourable microclimate for some pathogens/ prevent spread of the disease.
- Heat treatment; kills the pathogen
- Quarantine : prevent spread of the pathogen form one farm to the other.
- Use of clean tools / equipment, prevent spreading of the disease from one plant to the other.
- Use of resistant varieties ensure crops are not attacked by pathogens.

Weed control : eliminate weeds that could be alternate hosts for particular pathogen.
 Proper spacing - creates unfavourable conditions for some pathogens to multiply.
 Timely / early planting help crop to establish early before attack.
 Close season breaks the life cycle of pathogens
 Use of clean planting materials - disease free prevents introduction of pathogens in the field.
 Roguing, prevent further spread of disease.
 Crop rotation breaks life cycle of pathogens.
 Proper plant nutrition, increase disease resistance / control deficiency diseases.
 OWTTE (*any 10 × 1 = 10 marks*)

24. a)

Contour farming - Cultivation and planting done across the slopes helps in holding water thereby increasing infiltration and reducing runoff.

Mulching - covers the soil thereby reducing splash erosion / reduce speed of run off.

Strip cropping - give good soil cover with those that give soil cover controls movement of soil particles helping in soil control.

Vegetated waterway - Slow down runoff / eroded soil preventing further erosion.

Afforestation / reforestation trees protect soil from splash erosion by controlling the strength of raindrop.

Intercropping - cover the ground preventing splash erosion / surface runoff.

Minimum tillage - so as to maintain good soil structure / have a seedbed which is not easily detached.

Cover cropping - protect soil from effect of raindrop.

Grass strip / filter strips - reduce speed of run-off and filter out eroded soil. *any 8 × 1 = 8 marks*

b)

Difficult to control pests and diseases / parasites spread faster.

Land disputes are common.

No motivation to conserve land.

No motivation to make long term investments.

An individual cannot use land as security to acquire loan.

difficult to control breeding in livestock.

6 × 1 = 6 marks

c)

Sisal / gunny bags should not be used to prevent mixing of lint with bag fibres.

Picking should be done when the lint is dry to prevent fibres from sticking together.

use different containers for AR (Safi) and Br (fifi) gardens of cotton to ensure quality.

Picking should be done immediately the balls open to avoid staining by dust.

Avoid picking leaves and twigs to avoid contamination.

Use clean containers for picking.

6 × 1 = 6 marks

BURETI SUB-COUNTY JOINT EVALUATION TEST**443/2****AGRICULTURE****Marking scheme**

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| <p>1.</p> <ul style="list-style-type: none"> - Clean after use - Paining the frame - Greasing the moving parts / lubricating moving parts.
(Rej- Movable parts) - Repair / replace broken / worn out parts. - Apply oil on metal parts on long storage. - Proper storage - Tighten lose nuts / bolts. <i>2 marks</i> <p>2</p> <ul style="list-style-type: none"> - Progeny testing. - Mass selection - Contemporary comparison <i>1½ marks</i> <p>3. Large white <i>1 mark</i></p> <p>4.</p> <ul style="list-style-type: none"> - Egg eating - Cannibalism <i>1 mark</i> <p>5.</p> <ul style="list-style-type: none"> - To absorb moisture from poultry droppings. - Keep birds busy scratching, thus reducing cannibalism. - Keep the house warm. <i>1 mark</i> <p>6.</p> <ul style="list-style-type: none"> a) Blue ticks ; Gallsickness; red water. <i>½ mark</i> b) Brown ear ticks ;
ECF, Redwater, Nairobi sheep diseases / Theiliosis. c) Tsetse flies
Trypanosomiasis (nagana) <i>½ mark</i> <p>7.</p> <ul style="list-style-type: none"> - Prevents nutrient deficiency diseases. - Ensures resistance against disease infections. <i>1 mark</i> <p>8.</p> <ul style="list-style-type: none"> - Sporocyst - Cercaria - Redia <i>1 mark</i> <p>9.</p> <ul style="list-style-type: none"> - Use of rubber ring and elastrator. - Use of burdizzo. <p>10.</p> <ul style="list-style-type: none"> - Upgrading / grading up. - Cross breeding. <i>1 mark</i> <p>11.</p> <ul style="list-style-type: none"> - Nest building. - Plucking of fur from the belly. - Loss of appetite - Restlessness <i>2 marks</i> <p>12.</p> <ul style="list-style-type: none"> - Calf takes milk at body temperature. - Milk is free from contamination. - It prevents scouring in calves. - Milk is provided ad libitum. - Low labour requirement. <i>2 marks</i> <p>13.</p> <ul style="list-style-type: none"> - Induction - Compression - Power / ignition stroke - Exhaust. <i>2 marks</i> | <p>14.</p> <ul style="list-style-type: none"> - Irritation / scratching of the body. - Anaemia - Presence of mites below the plumage in patches. - Falling off feathers. - Wounds / dematitis due to burrowing effects. - Formation of crusts. <p>15.</p> <ul style="list-style-type: none"> - Sieve food / separating fine from coarse food. - Retain foreign and indigestible material like polythene and nails. <i>1 mark</i> <p>16. a) Top dead centre - This is the highest point the piston reaches in the cylinder during compression and exhaust stroke
during compression of fuel and air mixture. <i>1 mark</i></p> <p>b) Bottom dead centre This is the lowest point; the piston reaches in the cylinder during the intake and power strokes.</p> <p>17.</p> <ul style="list-style-type: none"> - Incorporate manure into the soil / stirring the soil. - Breaking soil clods. - Levelling the seedbed. - Covering broadcasted seeds. - Gathering / removing trash. <i>2 marks</i> <p>18.</p> <ul style="list-style-type: none"> i) Trachar; Camular <i>½ mark</i> ii) Hand drill - Drills bits / twist drill. <i>½ mark</i> <p>19. - Halter
- Rope
- Nose ring and lead stick. <i>1½ marks</i></p> <p>20.</p> <ul style="list-style-type: none"> a) It the mating of animals which are closely related. b) - Inbreeding can bring loss of hybrid vigour. - May lead to decline in fertility leading to species extinction. - Bring about reduction in performance. - Leads to high rate of pre-natal mortality. <p><u>SECTION B</u></p> <p>21.</p> <ul style="list-style-type: none"> i) Tsetse fly (Glossina spp) <i>1 mark</i> ii) • Trypanosomiasis disease • Cause anaemia • Damaged skin and hides / causing wounds (which act as routes for secondary infections by pathogenic organisms). <i>3 marks</i> iii) Water snail (Limnea species) <p>22.</p> <ul style="list-style-type: none"> i) Barbed wire fence <i>1 mark</i> ii) S - Barbed wire / barbs. <i>(3 marks)</i>
T - Drooper
U - Braces / wire braces / ties. iii) T - Prevent bending of wires / maintain tension. - Stopwire from sagging. <i>2 marks</i> |
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- Give support / make firmer / prevent loosening of wire / support post / prevent them from bending.

b)

- i) L - wire strainer / monkey strainer.
M - Clamp / sash clamp / T-clamp
N - Dibber
O - Spoke share 2 marks
- ii) L - To tighten wires during fencing to correct tension.
M - To hold pieces of work /holding for joinery
N - Making holes when planting.
O - For smoothening curved surfaces in woodwork.

23.

- i) C - battery cage
D - fold system 2 marks
- ii)
 - There is even distribution of manure.
 - Birds can feed on grass hence reducing the cost of feed used.
 - Fold can rotate to fresh area daily 3 marks

24.

- It should be properly ventilated.
- It should be leak proof to avoid dampness in the house which encourage disease infections.
- Litter on the floor to the house to be warm / absorbing moisture.
- Draught free / This can be achieved by making windward side wall solid top to bottom.
- Enough space for birds to avoid overcrowding.
- Proper drainage to avoid dampness and easy to clean.

 $1 \times 6 = 6 \text{ marks}$

- b) i) Chicken, turkeys, pigeons and ducks.
- ii) Causal organism 1 mark
 - Virus (accept)
 - Bima virus
- iii) Incubation period 1 mark
 - 2 - 3 days
- iv) Symptoms of attack
 - Glands above the vent become swollen.
 - Decrease in egg production.
 - Birds develop respiratory distress
 - There is loss of appetite.
 - Affected birds show low water intake.
 - Severe immuno-suppression / birds become susceptible to other diseases.
 - In hot weather and high humidity conditions the death rate (mortality rate) increases.

Control

(2 marks)

- Vaccination
- Use vitamins (especially B12) 2 marks
- c) - Milk fever 2 marks
- Bloat

25. a)

- Helps the driver to select any toward or reverse gear.
- Adjust speed of the drive from the engine crankshaft to the drive shaft.
- Helps to alter the speed ratio
- Enables the power from the engine to be more easily applied to the work done by the tractor.

- Enables the driver to stop the tractor movement without stopping the engine or without foot pressing on the clutch all the time.

 $5 \times 2 = 10 \text{ marks}$

b)

- Engine oil should be drained completely from the sump and replaced with new oil.
- The steering gear box oil should be inspected and refilled if the level goes below the recommended level
- The oil in the differential should be replaced as recommended.
- The linkage and the pulley attachment should be greased.
- Pulley oil level should be checked and added if need be.
- The dirty oil should be removed and replaced with clean one. any 5 correct points.

 $5 \times 2 = 10 \text{ marks}$

26. a)

- Promote growth.
- Help in blood clotting.
- Help in bone formation
- Help in muscular activity
- Prevent diseases in animals
- Act as organic catalyst in various metabolic and physiological. 4 marks

b)

- Use of prophylactic drugs such as antihelminthes or dewormers to kill parasites in animals.
- Keep animal houses clean and disinfected to kill eggs of the warm.
- Practise rotational grazing and rest pastures to starve larvae to death
- Keep the feeding and watering equipment clean to control re infection
- Use latrines by farm worker or proper disposal of human excreta to destroy the eggs.
- Proper meat inspection to avoid consuming of infected beef / pork.
- Proper cooking of meat to destroy the cysts of the tapeworm in the meat. 6 well explained $\times 1 = 6 \text{ marks}$

c)

- Body conformation
- Fertility /breeding ability
- Adaptability of breed to the area /hardiness
- Mothering ability in case of females.
- Production potential / yielding capacity / performance.
- Temperament / behaviour e.g. cannibalism / egg eating.
- Deformities / abnormalities e.g mono eyed.
- Health
- Offspring performance.
- Age of the animal
- Growth rate
- Prolificacy
- Quality product

 $10 \times 1 = 10 \text{ marks}$