52711

PRINCIPLES AND PRACTICES OF AGRICULTURE

DRAFT MARKING GUIDE

PRE MOCK 2019

1. (a) C (b) B (c) A (d) D

4@ ½; ½ x 4 = 2MRKS

2(a) State four ways in which farmers can use short term credit. (2MRKS

- buy seeds
- buy fertilizers,
- buy livestock feeds
- buy pesticides,
- buy fungicides
- pay for hired labour.

Award any 4pts @ ½; ½ x 4 = 2MRKS

(b) Mention three reasons why farmers fail to get agricultural credit.

- lack of security for credit
- high interest rate that ladder farmers
- lack of awareness.

- Fear of lossing useful items used as a Security for loans.
- High level of risks in farming that lead to losses.

Award 3pts @ 1MRK; 1X3 = 3MRKS.

3: (a) Name two common symptoms for viral Crop diseases.

- Leaf curling
- Mottling of leaves;
- Stunted growth;
- Chlorosis / yellowing of leaves.

Award 2pts @ 1MRK; 1X2 = 2MRKS.

(b) How can viral Crop diseases be controlled in the field?

- Planting resistant varieties.
- destroying infected crops;
- Spraying pesticides to kill vectors;
- destroying crop remains;

 Award 3pts @ 1MRK 1X3 = 3MRKS.

4. (a) Suggest four ways of ensuring high quality meat from a bull at slaughter stage.

- Starving the bull before slaughter;
- Giving a bull plenty of water to drink before slaughter;
- Slaughtering a healthy bull;
- ensure complete bleeding after slaughter;
- slaughter the bull in a clean place;
- avoid contaminating the beef with rumen contents;
- put meat in clean containers;
- Carrying out meat inspection after slaughter.

Award any 4pts @1mk; 1x4= 4mks.

5. Mention the four main functions of an electrical system of a farm tractor.

- Starting the engine by use of starter motor;
- producing a spark for igniting air-petrol mixture.
- providing lighting in the tractor
- recharging the battery

4pts @1mk, 1x4= 4mks

PART B

SECTION I: FARM MANAGEMENT AND FARM MECHANIZATION

6. a) Outline the advs & Disadvs of dipping in tick Control.

Advs.
- Many animals can be handled in a short time;
- Dip wash is used several times;
- animals bodies are properly covered by dip wash;
- dip tank can be used for many yrs;
- it requires little Labour to use.
- requires less skill to use.
- cheaper for a large herd;

4 pts a mark; 1 x 4 = 4 Marks

Disadvs
- High Cost of Construction
- It requires a lot of skill to mix the wash, test Concentration of dip wash;
- not suitable for some animals eg Calves, very pregnant,
- it can lead to dipping accidents,
- It requires a lot of labour to refill or empty the dip tank;
- if poorly ~~mixed~~ diluted dip wash can kill animals or fail to kill ticks
- rain water may dilute the acaricide,

- dip wash can be diluted by dirt;
- It's not economical for a small herd;
- It can lead to spread of contagious diseases eg foot and mouth disease;

Award any 4pts @1mk 1x4= 4mks

2(b) Explain the precautions that are carried out before dipping cattle.

- water the animals to avoid dipping thirsty animals that can drink accaricide;
- Seperate animals that are not suitable for dipping to control dipping accidents;
- check the level of dip wash and add when it's below recommended level.
- check the concentration of dip wash and carry out topping up when concentration is low.
- clean the foot bath and fill it with clean water to avoid hooves of the animals carrying dirt into dip wash;
- keep the animals in collecting yard to rest. this avoids dipping tired animals that may fail to swim through the dip wash.

- open the dip wash return pipe to allow the accaricide that drains from the bodies of animals flow back into the tank;
- run a few animals through the dip tank to mix the accaricide before actual dipping.

Award any 6pts @2 Mrks; 1Mrk mention, 1Mrk explanation

2x6 = 12 Mrks

TOTAL Q6 = 20Mrks

7. a) What are the benefits of keeping good farm records for farm interprise?
- They help a farmer find out whether the enterprise is making a profit or a loss;
- They help the farmer carry out farm planning and budgeting;
- Records can be used for sharing profits or losses in case of cooperative farming;
- records are used in fair income tax assessment;
- records help to discover areas that need improvement;
- help in calculating efficiency standards of the farm;

- records help the farmer to remember debts so that they are paid;
- records can show the financial position of the farm;
- records help the farmer to remember the debtors so that money can be claimed;
- records helps the farmer to determine the number of workers and wage level according to the profitability of enterprises.
- good farm records can be used by the farmer to get loans;
- records help to know the value of the farm in case it is to be sold off.
- records can be used to share the estates in case of death of the farmer.

Award 10pts @ 1mk; 1x10= 10mks

(b) Mention the type of records that can be kept by a vegetable crop farmer.

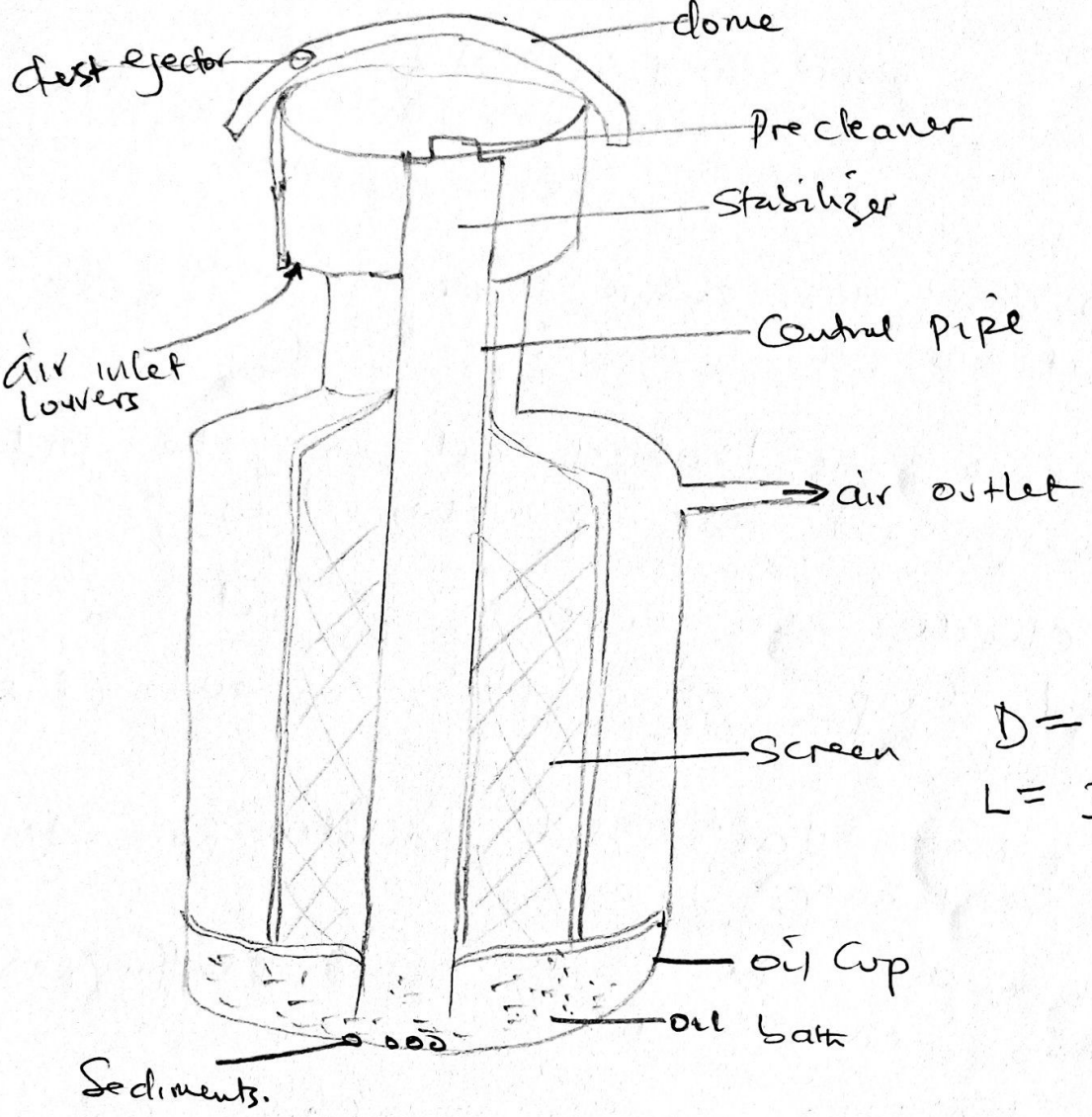
- type of crop grown
- variety of crop variety grown;
- Size of land used;
- Date of planting
- Dates of weedings
- Dates of Spraying with pesticides;
- Dates of Spraying with fungicides;
- expected dates of harvesting
- inputs used eg kgs of fertilizer, kgs of seed,
- Crop yield from previous season;
- expected yield
- Sales records;
- purchase records;
- labour records; eg no of workers and wages paid;

Award any 10pts @ 1mk 1x10 = 10 Marks

Total Q7 = 20 Marks

8 (a) Using a diagram, describe the working of a wet type air cleaner.

A wet type air cleaner




- air enters the precleaner through the inlet louvers;
- the vanes in the precleaner causes the air to swirl thereby removing large dirt particles.
- the fairly clean air ~~air~~ passes through the central pipe into the oil bath
- the air is bubbled through the oil bath which will remove most of the dirt particles.
- The clean air moves through the screen which will remove any remaining dirt particle;

- the clean air passes through outlet pipe to the engine / carburator.

award any 5pts @ 2mks;
1mk mention, 1mk explanation.
2x5 = 10 mks

(b). How can you ensure proper working of a wet type air cleaner?

- check the level of oil in the oil cup and top up when low;
- check the condition of oil in the oil cup and replace when it is dark;
- remove large dirt particles from the pre-cleaner;
- wash the screen in paraffin / petrol to remove dirt;
- dip the screen in clean oil after washing and drying it to have a film of clean oil on the surface;
- use correct grade of oil in the oil cup;
- remove dirt trapped in the central pipe.

award any 6pts @ 1mk; 1x6 = 6mks

Total Qn 8 = 20 mks

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SECTION II CROP PRODUCTION

9 (a) Outline the characteristics of a good quality pasture species.

- It's easy to establish
- Easy to eradicate
- Has high leaf to stem ratio.
- High nutrient content;
- Has a high growth rate;
- highly palatable to the animals;
- able to regrow quickly after harvesting/ grazing;
- Has a low fibre content;
- resistant to drought;
- resistant to pests and diseases.
- resistant to grazing;
- Suitable height for ease of grazing.

Award any 10pts @ 1 mark; 1x10 = 10 Marks.

(b) Describe the steps to be followed when preparing good quality hay.

- Cut the pasture plant at flowering stage.

- Allow the materials to partially dry in the field;
- remove foreign materials like weeds, polythene paper;
- Collect the materials and tie them into bales;
- Sprinkle additives like ~~nadakkas~~ Salt solution to increase nutrient content;
- Carry the bales into a store;
- keep the materials in a well aerated store which is leak proof;
- The materials should be put on raised rails;
- Allow the materials to stay in the shade until it is properly dry;
- feed the materials to animals when it is dry as hay;

Award 10 pts @ 1 mk; $1 \times 10 = \underline{10 \text{ Mks}}$

Total Qq = 20 Mks

+2 -

10(a) Mention six cultural practices that can be used to increase crop yields.

- Pruning; it allows greater sunlight penetration for fast rate of photosynthesis, Controls pests and diseases.
- use correct seed rate
- Mulching; Conserves soil moisture for proper plant grows, Control weeds etc.
- weed control.
- thinning; it controls competition for growth factors;
- correct crop spacing,
- fertilizer appln; provides nutrients for proper plant growth;
- Carry out gap filling
- Cover cropping; controls weed growth controls soil erosion
- Carry out drainage
- early planting; Crops get a good start against weeds, crops benefit from nutrients before leaching,
- Selects of good seed/planting material
- irrigation; Provides adequate water for proper crop growth;
- Harvest at right stage
- Staking; exposes the crop to adequate sunshine;
- proper seed bed prepn.
- earthing up; Softens the soil for proper root growth and development;
- Modify soil pH
- Provide shade in some crops.

Award any 6pts @1mk 1x6 = 6mks

10(b) Explain the precautions taken when storing crop produce.

- ensure that the store is vermin proof to control destruction of produce by storage pests:
- ensure leak proof roof to reduce rotting and germination;
- ensuring proper ventillation to reduce wet heating, keep produce dry;
- put produce on raised plat form to reduce dampness:
- dusting the store with suitable chemicals to kill pests;
- Clean the area around the store to keep away vermins
- the store shld be raised off the ground to control dampness;
- Avoid Mixing new produce with old produce to control cross infection by pests;
- Mixing produce with chemicals to control pest damage;
- Provide drainage channels around the store to avoid water from entering the store
- Seal cracks on walls and floor to avoid ~~ridding~~ hiding place for pests.
- provide rat guards to reduce rodent damage
- Hang locable doors, to control ~~keep~~ theft of produce.
- ensure that the produce is properly dried to control rotting.

+4 —

- ensure that the floor is concrete to avoid dampness;
- trap and kill rodents in and around the stored produce;
- put produce in clean containers to avoid contamination;
- the produce to be stored in a central place to control theft;
- ensure proper handling of produce before storage to avoid losses;
- Sorting the produce to remove poor quality produce;
- Carry out timely harvesting of produce to avoid pest infestation from the feeld;
- fresh perishable produce can be kept in cold rooms to control rotting;
- ensure that produce is kept in a well cleaned store to avoid pests from previous produce;
- have wire mesh on ventilators to avoid entry of pests;

Award any 14pts @ 1mark;

1x14 = 14 Marks.

Total Q 10 = 20Marks

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Q11 (c) Describe the different types of water erosion

- Sheet erosion; water flows over the land surface and removes soil uniformly in a thin layer;

- rain drop erosion / splash erosion; rain drops fall on land surface and dislodge soil particles which are later washed away;

- rill erosion; water flows over the land surface and removes soil particles creating shallow ill defined channels;

- Gully erosion; water flows down a valley and removes soil creating large defined channels;

- river bank erosion; water flows down the river and removes soil from the sides and bottom of the river;

Award any 4 pts @ 2 Mks; 2 x 4 = 8 Mks

Ab -

11c) Explain how cultural practices are used to control water erosion.

- Mulching: the mulching material reduces speed of run off, it also controls impact of rain drops;
- deep ploughing; this increases water infiltration
- Cover Cropping: Cover Crops reduce speed of run off;
- Manuring; manure binds soil particles and reduce erosion;
- Strip Cropping; strips of crops reduce speed of run off
- Intercropping; reduces speed of run off and increasing water infiltration;
- Windrows; these reduce speed of run off;
- Crop rotation; Crops that improve on soil structure eg crops in grass family and those that cover the soil to reduce erosion like cover crops are included;
- Minimum tillage; Controls destruction of soil structure;
- Afforestation; roots of trees bind soil particles also debris from reduce surface run off.
- high density planting; these reduces surface run off.

TOTAL Q11 = 20MARKS; Award any 6pts @2MARKS; 2x6 = 12MARKS
1MARK mention 1mark explain

SECTION III: ANIMAL PRODUCTION

Q12 (a) Outline the effects of ticks on farm animals.

- ticks transmit diseases to farm animals;
- they suck blood leading to anaemia;
- cause irritation to animal during blood sucking
- cause lameness when they attack the hooves;
- cause physical damage to the skin of animals/ cause wounds on animal's body.

~~cause wounds on the body~~

1x5= 5 marks

(b) Describe the life cycle of a 3-host tick.

- Engorged female falls down to lay eggs;
- eggs hatch into larvae
- Larvae climbs grass and are brushed onto the coat of the animal as first host.
- Larvae feeds on the 1st host and an engorged larvae falls to the ground;
- Larvae moults into nymphs
- nymphs climbs grass and are brushed on to a passing animal as 2nd host.
- nymphs feed on the 2nd host and fall to the ground;
- nymphs moult into adults
- adults climb grass and brushed onto

+8

- passing animal as the 3rd host
- adults feeds on the 3rd host, mate on 3rd host and engorged female falls down to lay eggs.

10pts @ 1mk 1x10 = 10 Mks

12(c) Suggest effective control measures for ticks on the farm.

- regular spraying / dipping of animals to kill ticks;
- double perimeter fencing with a clear area between fence lines.
- Controlled burning of infested pastures to kill ticks;
- Clearing bush, trees and thinning;
- use of local animals as baits to trap ticks and spray/dip these animals regularly.
- hand picking and killing ticks;
- apply pygrease on the coat of animals to control ticks;

5pts @ 1mk 1x5 = 5 Mks

Total Q12 = 20 Mks

13 (a) Mention the Symptoms of Mastitis infection in adaing Cow.

- painful udder
- blood stains in the milk
- pus in the milk
- watery milk;
- reduce milk yield.
- Swollen udder;
- thick milk production;

Award any 6pts @ 1MK 1x6= 6 MKS

(b) Explain the factors that encourage development of Mastitis in daiy Cows.

- incomplete Milking; milk left in the udder encourages multiplication of bacteria
- Stripping of teats; these cause wounds that are entry points for bacteria.
- Misuse of milking machine; this can cause injury to the teats and udder;
- injury to the teats or udder by sharp objects allow entry of bacteria.
- genetic factor; Some animal are more prone to Mastitis;
- age of the cow, old cows are more prone to Mastitis;
- pendulus udders; these can easily be injured by sharp objects.
- failure to follow milking routine. milk staying in the udder for along time provides suitable breeding place for bacteria

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- Unhygienic milking process: bacteria may enter into the udder and cause infection
- Failure to use strip cup; encourages spread of disease to other animals;
- Level of milk prody; high milk producers are more susptible to mastitis;

Award any 2 mark ... 1 mark.

(b) What are the preparations that shld be carried out before arrival of day old chicks?

- scrub the room with plenty of water and soap;
- disinfect the room to kill pathogens;
- disinfect equipments to be used;
- put confinement ring in the brooder
- ensure that the brooder is vermin proof;
- provide a foot bath with disinfectant at the door way;
- introduce fresh litter in the room about 15cm thick on the floor;
- Cover the litter with paper to avoid chicks eating litter
- obtain quality feed from a reliable source
- heat the room over night before arrival of chicks.
- protect the heat source;
- hang a thermometer in the room for monitoring temp;

- provide light to the rooms
- provide fresh clean water;
- distribute water troughs in the ring
- ensure proper ventilation in the room;
- sprinkle chick mash in the paper covering litter;
- provide adequate feed troughs;

Award any 8pts @ 1mk 1x8= 8 Mrks

14(b) Explain the abnormalities that occur during the process of egg formation in a hen.

- Soft shelled eggs due to lack of Calcium in the diet or abnormalities in the shell gland;
- thin shelled eggs, may be due to inadequate Calcium in the diet;
- double yolk: two ova may be shed at the same time or defect in the ovary;
- abnormal smell of the yolk; due to poor quality feeds;
- abnormal colour of the yolk; due to lack of Carotene in the diet.
- dwarf eggs due to hormonal imbalance;
- rough egg shells; due to non-uniform deposition of the shell;
- abnormal shape of the egg; due to abnormality in the isthmus;

- Blood Spot in the yolk, drop of blood is shed and comes with the yolk during ovulation

- Meat Spot; piece of tissue is torn and comes down with the yolk during ovulation;

- Shelless egg; may be due to abnormality in the ovary/ failure of yolk to be shed.

Award any 6pts @ 2mks; 1mk mention, 1mk explanation

2x6 = 12 mks

Total Q1c = 20mks