SUNRISE EVALUATION EXAMS AGRICULTURE F3 MARKING SCHEME 2021

1. Give **four** activities that may be undertaken in organic farming (2 marks)
   - Mulching
   - Application of organic manure
   - Crop rotation
   - Physical/cultural pest weed parasite and disease control
   - Rearing of livestock on natural foodstuff
   - Use of medicinal plant products to control diseases and parasites

2. State **four** harmful effects of wind on crop production (2 marks)
   - ✔ It is an agent of soil erosion
   - ✔ Causes lodging and damage to crops
   - ✔ Increases the spread of pests and diseases
   - ✔ Increases the rate of evaporation of moisture from the soil
   - ✔ Increases evaporation rate

3. State **four** practices that can be used to improve water logged clay soils (2 marks)
   - Addition of manure/organic matter
   - Provide drainage
   - Use of lime
   - Plant eucalyptus trees

4. State **four** desirable qualities to be considered when selecting planting materials (2 marks)
   - Purity of planting materials
   - Suitability to the ecological conditions
   - Germination percentage
   - Health of the planting materials
   - Size of the planting materials

5. Give **two** causes of blossom-end rot in tomatoes (1 mark)
   - o Irregular watering
   - o Calcium deficiency in young fruits

6. Give **four** pieces of information contained in a land title deed. (2 marks)
   - Title deed number/land parcel number
   - Size of the land
   - Name identity number of the owner
   - Type of ownership
   - Date of issue
   - Signature of the issuing officer and seal

7. Name three micro-nutrient elements whose deficiency symptom is chlorosis (1½ marks)
   - o Nitrogen
   - o Potassium
   - o Magnesium
   - o Calcium
   - o Sulphur

8. State two water treatment processes that take place in the coagulation and sedimentation tank (1 mark)
   - o Softening of water
   - o Aeration

9. State four reasons for pruning fruit crops (2 marks)
   - ▪ Reduces incidences of pest and disease attack
   - ▪ Enables effective use of chemical sprays
   - ▪ Facilitates easy harvesting
   - ▪ Improves the quality of the fruits
   - ▪ Allows adequate light penetration into the plant

10. Name three practices carried out to improve and maintain permanent pastures (1½ marks)
    - o Control of weeds
    - o Top dress with nitrogenous fertilizer as required
    - o Practice controlled gazing to avoid degeneration
    - o Cut back dry and unpalatable stems with movers to encourage fresh growth.

11. State four advantages of timely harvesting of crops (2 marks)
    - o To prevent rotting
    - o To prevent germination/sprouting
    - o To prevent pest infestation
    - o To reach the market early when the demand is high for good prices

12. List three tertiary operations that may be carried out in a seedbed (1½ marks)
    - o Ridging
    - o Rolling
    - o Levelling

13. List four disadvantages of using compost manure in crop production. (2 marks)
    - ✔ It may burn crop roots if used immediately
    - ✔ Its preparation is labour intensive
    - ✔ Its bulky and hence costly to transport
    - ✔ It is difficult to determine the amount of nutrients in the quantity applied
    - ✔ Can spread/weeds/diseases/pests

14. Bactrian

15.
    – Brown ear tick (*Rhipicephalus appendiculatus)*
    - Culex mosquito/Aedes mosquito
    - Tsetse fly
    -Brown ear tick (*Rhipicephalus appendiculatus*

    4 x ½ = (2 marks)

16.
    - ✔ Near source of water
    - ✔ Topography/Drainage
    - ✔ Type of soil

✔ Accessibility to the pond
✔ Security of fish 4 x ½ = (2 marks)

17.
Coping saw (½ Each)
Inside calipers
Tinsnips
Wire strainer

SECTION B

18.
a) Trelishing/ training
- o Fruits get soiled/harvesting of dirty fruits
- o Fruits become rotten
- o Fruits affected by soil borne pests
- o Difficult to carryout field practices
- o Passion fruit/pumkins, garden peas/cucumber/water melons/tomatoes

(3x1=3marks)

19. a) To find out water retention and drainage of different types of soil
- Sample soils Q, R and S
  - Q Sandy soil
  - R Loam soil
  - S Clay soil

(2x1=2marks)

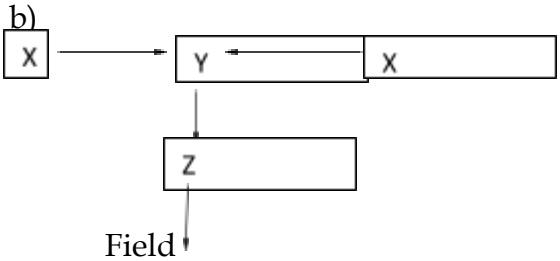
b) Adding organic matter/manure
- Liming
- Adding sand

(2 x 1 = 2 marks)

c) S – Paddy rice (½ mark)

20. a) Four Heap System

b)



c) Well drained
Leeward side to direction of wind in relationship to homestead
Should be accessible
Should be near the farm where the compost is to be used
Should be located in a well sheltered place

21. (a) Direction of movement

A → B → C (1 x ½=½mk)

(b) Uses of parts;

A – Hold animals before dipping

waiting area

B – Clean cattle hooves

Prevent dip contamination

C – Hold livestock to wait for dip wash to drip

Draining race (3 x 1=3mks)

(c) Precautions farmer should take for effective dipping

- Proper mixing of dip wash
- Check concentration of dip wash
- Top up dip was at correct level (2 x 1=2mks)

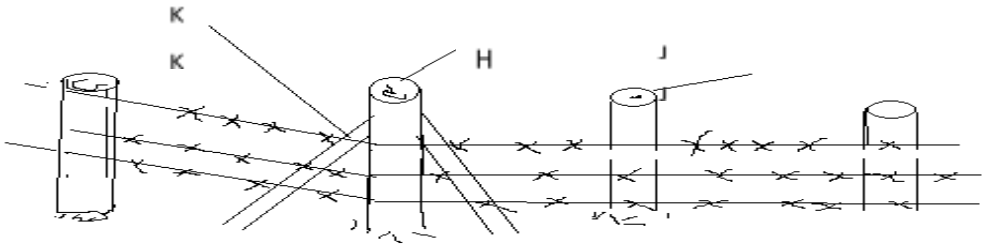
(d) Uses of roof

- Reduce evaporation of dip wash
- Prevent dilution of dip was by rain water (2 x 1=2mks)

(e) Methods to control ticks

- Hand picking and kill
- Burn heavily infested pasture to kill them
- Double fencing to starve the ticks
- Use predictor to feed on ticks
- Cultivate heavily infested pasture to control ticks (3 x 1=3mks)

22. Below in a diagram showing parts of a fence. Use it to answer the questions that follow.



(a) Identify the type of fence above. (1mk)

Barbed wire fence rej. Wire fence

(b) Name the parts labeled H and J. (2mks)

H- king/corner post

J – Standard post

(c) What is the role of the part labeled K? (1mk)

Add support to the King post

(d) On the diagram, draw a dropper in the right position. (1mk)

- NB: The dropper should be between two standards interwoven btw the wire strands and not touching the ground

23. a) Cutworm / agrotis SPP. (1 mk)

b) -Early planting. For crop to establish first (2 mks)

- application of appropriate pesticide/insecticide/chemical to kill it.
- field hygiene to prevent transmission from previous crop residues

c) It increases the cost of productionby buying the pesticides (2mks)

It reduces the yield of the crops

24. a) - Straight fertilizer supply one of the fertilizer elements e.g N_1 P_1 or K

-Compound fertilizers supply two or three fertilizer elements.

b) 100kg supply 20kg N

1 hectare = 200kg C.A.N

100kg = 20kg N

200kg = ?

$$= \frac{200 \times 20}{100_{1}}$$

= 40kg N

1 ha requires 40kg N

5 ha " ?

$$\frac{40 \times 5}{1} = 200\text{kg N}$$

SECTION C

25. a) i) Planting of beans

- Use of certified seeds
- Plant at the onset of rains/time the planting such that they mature during the dry seasons
- Dig holes/fallows at 5 – 10cm
- Place 2 – 4 seeds per hole
- Spacing 60-45cm by 10-15cm
- Apply phosphatic fertilizer during planting time (4 x 1 = 4 marks)

ii) Field practices

- Carry out gapping/thinning if necessary
- Provide stakes for climbing varieties
- Control pests such as beanfly, aphids, thrips and birds using appropriate method
- Control diseases such as anthracnose bean rust using appropriate method
- Stake/train tall/indeterminate varieties. (4 x 1 = 4 marks)

iii) Harvesting

- Harvesting is done by uprooting dry whole plants

- o Uproot when the weather is cool to minimize pod shattering
- o Gather the uprooted plants and spread them for further drying
- o Thresh by beating with sticks (2 x 1 = 2 marks)

b)Safety precautions when using herbicides to minimize environmental pollution

- o Avoid spraying on windy days to prevent drift to neighboring fields
- o Avoid drift to animal pastures, feeds and water
- o Proper disposal of empty containers
- o Avoid washing spraying equipment in water sources that are used by animals human beings
- o Store chemicals in safe places out of reach of children
- o Store chemicals away from humans and livestock feedstuff store
- o Equipment used in spraying herbicides must be thoroughly washed.(6 x 1 = 6 marks)

c) Precautions when harvesting cotton

- o Sisal bags should not be used to prevent mixing of lint and sisal fibres
- o Hands should be cleaned to avoid staining of lint
- o Picking should be done when the lint is dry/harvesting during dry weather
- o Use clean containers for picking
- o Use different containers for AR(safi) and BR(fifi) grades of cotton to ensure quality produce
- o Picking should be done immediately the bolls open to prevent staining by dust/dirt
- o Avoid picking leaves and twigs to avoid contamination (4 x 1 = 4 marks)

26.

a) **The species of the animal**.Certain species of animals are affected by specific diseases like swine fever for pigs and new castle for poultry.
b) **The breed of the animal**. Certain breeds of animals are affected by particular diseases like cancer of the eye for Hereford and solar erythema for large whites.
c) **The age of the animal**. Certain ages of animals are easily affected by certain diseases e.g anemia for piglets and lamb dysentery for lambs.
d) **Sex of the animal**. Certain diseases are associated to sex of the animal e.g Orchitis for males and vaginitis for females.
e) Color of the animal . Black colored animals suffer from heat stress than white coloured animals **(5 x 1 = 5marks)**

(b)

a. Burning of the infested pastures in order to kill all the stages of the lifecycle of ticks.
b. Ploughing the pasture so that the stages of the lifecycle are exposed to sunlight for desiccation or killed by burying deeply.
c. Top dressing the pasture with lime or acaridae is also effective in controlling larvae, nymphs and adults
d. Fencing the pasture and farm to keep off intruding animals that could be carriers.
e. Starving the ticks to death by enhancing rotational grazing. Effective in breaking lifecycles.
f. Hand picking the tricks and killing them(deticking). **(6 x 1 = 6marks)**

(c)

- Age of the animal. Young animals produce higher butterfat content in milk.
- The middle stage of lactation of a cow has higher butterfat content.
- Condition of the animal. Emaciated sick and pregnant animals produce low butterfat content.
- The last drawn milk during milking has higher butterfat content.
- Time of milking. Evening milk has higher butterfat content than morning milk.
- Breed of the animal. Jerseys, Guernsey the Zebu cows have a higher butterfat content than other breeds like freisian
- Season of the year. Cows produce milk with a lower butterfat content during cold season than warm season.
- Cows that feed on roughage produce milk with higher butterfat content than other feeds.
- Cows suffering from disease like mastitis produce milk with a low butterfat content and poorly contaminated.
- Cows under medication with antibiotics produce milk that is poorly constituted.

(1 x 9= 9marks)

27. (a) Describe various cultural uses of livestock. (8mks)

- Status symbols: one is regarded wealthy on owning large herds of cattle, sheep or goats.
- Medium of exchange: livestock were used during barter trade
- Social ceremonies: Ceremonies like marriage and funerals had live or slaughtered animals.
- Recreational purpose. Some activities like cock fighting, bull fighting, made people utilize their time constructively.

(b) Describe various livestock rearing practices. (12mks)

- Feeding – enhances maintenance and productivity of the animal. Also important in preventing diseases in animals
- Parasite and disease control. Ensures animals remain healthy and productive
- Breeding practices: Ensures multiplication of healthy animals
- Identification: Facilitates record keeping and other aspects of livestock management
- Debeaking: important in poultry to control vices e.g cannibalism and egg eating
- Tooth clipping: Removal of canine teeth in piglet 24 hours after birth
- Culling: removal of unproductive animals from a breeding herd.