NAME: .....ADM. NO: .....CLASS:...
AGRICULTURE PAPER 1
END YEAR EXAM – 2025
FORM THREE

MARKING SCHEME:
SECTION A: (30 MARKS)

1. State four characteristics of large-scale farming system. (2mks)
- ***Use of large tracts of land.***
- ***Requires heavy capital investment.***
- ***Use of skilled labour***
- ***High level of management.***
- ***Usually carried out for commercial purpose.***

2. Outline four factors that can make shifting cultivation practicable. (2mks)
- ***When land is abundant.***
- ***Population is sparse***
- ***Number of livestock per unit area is slow.***
- ***When land is communally owned.***

3. State two effects of high temperature on crop production. (1mk)
- ***Increases evaporation leading to wilting in crops.***
- ***Increases rate of growth/hastens maturity in crops.***
- ***Improves the quality of crops e.g. pineapples and oranges.***
- ***Increased incidences of disease infection and pests.***

4. State two effects of sub-soiling in land preparation. (1mk)
- ***Breaking up of hardpans***
- ***Facilitates soil aeration.***
- ***Brings to the surface mineral salts.***

5. Differentiate between soil texture and soil structure. (2mks)
Soil structure – ***Physical appearance of the soil according to the way individual soil particles are arranged, packed or aggregated.***
Soil texture – ***is the coarseness or fineness of soil when felt between the fingers.***

6. State two reasons why green manure is not commonly used by many farmers. (1mk)
- ***Most crops used are food crops hence hard for to use them as green manure.***
- ***It utilizes most of soil moisture and leaves little for the next crop.***
- ***Micro-organisms release nutrients slowly.***
- ***It delays planting due to long time of decomposition.***

7. Enumerate four types of farm records kept by farmers. (2mks)
- ***Production records***
- ***Inventory records***
- ***Field operation record.***
- ***Breeding records***

8. Outline two importance of a title deed in land tenure system. (1mk)
- ***Security of tenure***
- ***Ability to secure loans/credit.***
- ***A farmer can lease land using it to earn income if unable to use land.***

- ***Minimizes land disputes with neighbours.***

9. State reasons why it is difficult to control the following weeds. (2mks)

i) Oxalis – ***underground bulbs that remain in the soil***
ii) Couch grass – ***presence of deep underground Rhizomes***
iii) Black jack – ***many seeds which are easily dispersed***
iv) Nut grass – ***many underground bulbs that remain in the soil.***

10. What is the meaning of the following terms as used in pest control?

i) Economic injury level – ***it is when the population of a pest causes damage beyond which the plant can tolerate. (1mk)***

ii) Integrated pest management – ***is the combination of two or more pest control methods to enhance better results. (1mk)***

11. State two varieties of beans growth in Kenya. (2mks)

- ***Rose coco, mwezi mmoja, Wairimu, Canadian wonder, Haricot, Mwitemania, Mexican 142, French beans.***

12. List two advantages of a grass-legume pasture over pure stand grass pasture. (1mk)

- ***Mole palatable than pure grass.***
- ***A guard against total failure/loss due to pest and disease attack/ bad weather.***
- ***High yields.***
- ***More nutritious/balanced.***
- ***Better weed control.***
- ***Reduces soil erosion due to good soil cover***
- ***Increases soil fertility.***
- ***Economizes on the use of fertilizer.***
- ***Tends to reduce bloat brought about when a legume is fed alone.***

13. Why is too much air undesirable in silage making? (1mk)

Causes silage materials to decompose/rot.

14. State four reasons for staking of tomatoes. (2mk)

- ***Production of clean fruits/high quality.***
- ***Facilitates easy spraying and harvesting of the crop.***
- ***Controls incidences of disease outbreak such as blight.***
- ***Prevents infestation by soil borne disease.***

15. Outline two methods of breaking seed dormancy. (1mk)

- ***Scarification/mechanical***
- ***Heat treatment/hot water /slight burning***
- ***Chemical treatment.***
- ***Soaking in water.***

16. List two demerits of using seeds as planting materials. (1mk)

- ***Plants developed from seeds take long time to mature.***
- ***Some seeds have long dormancy periods.***
- ***Some seeds love viability if stored for long period of time.***
- ***Some seeds are very tiny hence difficulties in germination unless special conditions are provided.***

17. Give two importance of raising seedlings in polythene sleeves compared to direct establishment on the ground. (1mk)

- ***Controls root disturbances during transplanting***
- ***Seedlings can be stored for a long period awaiting conducive environmental conditions for planting.***
- ***It is easy to transport seedlings.***
- ***Mixture used to fill polythene sleeves***
- ***Is free from pests and diseases***
- ***Seedlings establish faster in the fields***

18. (a) State three post harvesting practices carried out in crop production. (3mks)

- ***drying***
- ***Threshing/shelling***
- ***Winnowing***
- ***Dusting with a suitable pesticide***
- ***Sorting***
- ***Packing***
- ***Processing***

(b) List two limitations using a traditional granary in crop storage. (2mks)

- ***It is limited in size***
- ***Produce is exposed to pest attack.***
- ***Roof may leak leading to rotting of stored produce.***
- ***Lacks security.***
- ***Can burn easily.***

SECTION B: (20MARKS)

19. Below are diagrams of common weeds found in the farm. Use them to answer questions that follow.

(diagram)

i) Identify weeds Q, R and S. (3mks)
Q – Double thorn
R – Datura stramonium/Thorn apple
S – Striga/Witch weed

ii) Mention one harmful effect of weed Q and R. (1mk)
Q – Causes irritation to the farmer because of thorns.
R – Poisonous to livestock.

iii) Give a reason why weed S is referred to as a parasitic weed. (1mk)
Because it depends on a plant as a host for nutrients and survival.

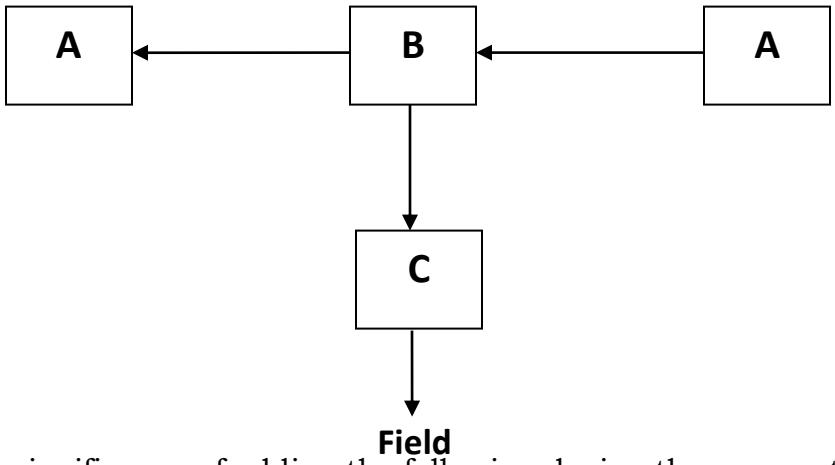
20. The diagram below is an illustration of turning a certain type of manure. Use it to answer questions that follow.

(diagram)

a) Name the type of manure that is turned using the above method. (1mk)

Compost manure.

b) By use of arrows, show how the manure is turned. (1mk)



c) What is the significance of adding the following during the preparation of compost manure?

i) Adding well rotten manure. (1mk)
To provide food for micro-organisms.

ii) Adding garden soil. (1mk)
To introduce micro-organisms in the manure.

iii) Adding ash. (1mk)
To add potassium in the manure.

21. Below are representations of certain pests that attack crops. Use them to answer questions that follow.

i) Identify pests P and Q. (2mks)
P – Weaver bird
Q – Rat

ii) State two effects of pest Q in crop production. (2mks)
- ***It unearths planting materials hence lowering germination percentage.***
- ***It lower crop yield in the field and store.***
- ***Increases the cost of production.***

iii) Highlight three methods of controlling pest P. (3mks)
- ***Use of traps***
- ***Chasing them away***
- ***Destroying their nests.***
- ***Crop rotation.***
- ***Timely planting.***
- ***Use an appropriate pest site.***

iv) At what stage do pest P attack crops? (1mk)
At milky stage.

SECTION C: (40 MARKS)
Answer any TWO Questions.

22.(a) Explain five effects of soil erosion. (10mks)

- ***poor yields due to removal of nutrients***
- ***Uprooting of crops.***
- ***Exposes underground water pipes.***
- ***Destroys Earth roads.***
- ***Removal of top soil which contains nutrients.***
- ***Siltation of dams, rivers and streams.***
- ***Creates tourists attraction centres.***

(5x2 =10mks)

(b) Explain five methods used to control crop diseases. (10mks)

- ***Crop rotation to break lifecycle.***
- ***Rogueing to remove infected crops***
- ***Planting disease free materials /certified seeds.***
- ***Close season to break lifecycle.***
- ***Early/Timely planting to escape serious attack.***
- ***Proper spacing – to create unsuitable conditions for diseases.***
- ***Use of resistant crop varieties to prevent attack.***
- ***Use of appropriate chemicals***
- ***Use of clean tools to prevent spread of diseases.***
- ***Quarantine to prevent introduction of new diseases into farms.***
- ***Pruning – creates conditions unsuitable for micro-organisms.***
- ***Control of vectors to prevent spread.***
- ***Proper plant nutrition makes plants strong to resist infection.***

23. Describe production of maize under the following:

i) Ecological requirements. (3mks)

Rainfall 600-1250 mm
Altitude – up to 2200m above the sea level
Temperature – 14-30oC
Top soils – Loam/Alluvial fertile soil which is well drained.
pH – neutral/Alkaline

ii) Seed bed preparation. (4mks)

- ***Prepare the land early before onset of rains.***
- ***Remove stumps where they occur***
- ***Plough deep during dry season to eradicate perennial weeds.***
- ***Harrow to obtain a medium tilth.***

iii) Planting. (5mks)

- ***Plant at the onset of rains***
- ***Select maize variety suitable to your area.***
- ***Use healthy/certified seeds.***
- ***Use a spacing of 90cm × 30cm or 75cm by 45cm.***
- ***Apply phosphate fertilizer at the rate of 200kg/ha or organic manure.***
- ***Plant by hand or planters at seed rate of 2 seeds per hole.***
- ***Depth of 2.5cm depending on moisture content in the soil.***
- ***Cover seeds with a light layer of soil.***

iv) Field management practices. (5mks)

- ***Grapping/thinning***
- ***Weeding***
- ***Top dressing***

- ***Pest control – stalk borer, aphids, rodents and birds, weevils e.t.c.***
- ***Diseases – smut, rusts, maize streak.***
- ***Mulching***
- ***Watering***

v) Harvesting. (3mks)

- ***Harvested after 4 or 6 months***
- ***Moisture content 14-28%***
- ***Cut maize and stock in the frut to allow cobs to dry.***
- ***Remove husks by hand or combined harvester***
- ***Dusting***
- ***Shelling of maize cobs, dried, weighed and packed in 90kgs***

Any 3x1 = 3mks

24. (a) Describe ten (10) nursery management practices that are carried out after seed germination.

- ***Removal of mulch after seed germination.***
- ***Erect a shade 60cm high above the bed surface.***
- ***Carryout regular watering.***
- ***Control of weeds by uprooting.***
- ***Spray with a suitable fungicide to control fungal diseases.***
- ***Spray with a suitable insecticide to control insect pests.***
- ***Carry out rogueing incase plants are infested by a disease.***
- ***Carryout thinning where seedlings are overcrowded.***
- ***Spray foliar based fertilizer where nutrient deficiency symptoms are noted.***
- ***Carry out hardening off two weeks before transplanting.***

(b) Explain five factors to be considered when designing a crop rotational programme. (10mks)

- ***Fertility level of the soil – if the soil is infertile, include a leguminous crop.***
- ***Crop nutrient requirement – plants which require more nutrients should come first in a rotation programme***
- ***Pest and disease incidence – plants of the same family should not follow one another in a rotation sequence.***
- ***Soil texture – where soil structure has been destroyed due to continous cultivation, include grasses.***
- ***Weed control – some crops which act as hosts for weeds should not be part of the rotation programme where such weeds are common.***
- ***Root depth – Deep rooted crops should come first to access leached nutrients before planting shallow-rooted crops.***

5x2 = 10mks