

**MARKING SCHEME
AGRICULTURE FORM PP1**

SECTION A (30MARKS)

Answer all the questions in this section in the space provided.

1. Characteristics of intensive farming system. (2mks)
- High yield per unit area
 - Capital intensive
 - Labour intensive
 - High managerial skills
- $\frac{1}{2} \times 4 = 2\text{mks}$
- 2a).causes poisoning to livestock and human
Thorn apple, Sodom apple
- b) Alternate host of rust
Wild oats
- c) Aquatic weed
Salvia
3. Plant part used for vegetative propagation of each of the following plants.
- | | |
|--|---------------------|
| (i) Sisal - Bulbils/suckers | ($\frac{1}{2}$ mk) |
| (ii) Pyrethrum - splits | ($\frac{1}{2}$ mk) |
| (iii) Sweet potatoes – vine /stem cutting (reject cutting alone) | ($\frac{1}{2}$ mk) |
| (iv) Sugar cane – setts | ($\frac{1}{2}$ mk) |
4. Cultural ways of controlling black jack (2mks)
- (i) Mulching
 - (ii) Cover cropping
 - (iii) Crop rotation
 - (iv) Proper spacing
 - (v) Clean seed bed
 - (vi) Flooding
 - (vii) Timely planting
- $\frac{1}{2} \times 4 = 2\text{mks}$
- 5.Sources of underground water (1½mks)
- Springs
 - Boreholes
 - Wells
- $\frac{1}{2} \times 3 = 1 \frac{1}{2} \text{ mks}$

6. Causes of blossom end of rot in tomatoes (1½mks)

- Irregular watering
 - Lack of calcium
 - Excessive use of nitrogen
- ½ x 3 = 1 ½ mks

7. Qualities of a good green manuring plant (1½mks)

- Hardy
 - Fast growth
 - Ability to rot quickly
 - Highly leafy
 - Leguminous
- ½ x 3 = 1 ½ mks

8. Reasons for practicing minimum tillage. (2mks)

- Reduce cost of cultivation
 - Control soil erosion
 - Improve soil structure
 - Conserve water
- ½ x 4 = 2mks

9. Reasons that should be kept by a poultry farms

- Health records
 - Feeding records
 - Labour records
 - Egg production records
 - Marketing records
 - Inventory records
- ½ x 4 = 2mks

10. Ways in which pastures are classified (1½mks)

- Pasture stand; pure/mixed stand
 - Pasture establishment; Natural/artificial
 - Ecological zone
- ½ x 3 = 1 ½ mks

11. Ways in which land reforms can be implemented in Kenya. (2mks)

- Land consolidation.
 - Land adjudication and registration/issue of title deeds
 - Improve land legislation
 - Tenancy reforms
 - Land settlement and resettlement
- ½ x 4 = 2mks

12. Factors that determine the stage at which a crop is harvested. (2mks)

- Market price/market demand
- Weather conditions
- Purpose/intended use
- Taste and preference/form required
- Concentration of required chemical/colour/maturity

$\frac{1}{2} \times 4 = 2\text{mks}$

Be

13. Beneficial effects of weeds to a farmer. (2mks)

- Some are edible to man
- Some have medicinal value
- Control soil erosion
- Some provide food to livestock
- Releases humus after decomposition

$\frac{1}{2} \times 4 = 2\text{mks}$

14. Advantages of practicing crop rotation. (2mks)

- Maximum use of nutrients
- Control buildup of pests and diseases
- Control weeds
- Improve soil fertility when legumes are included
- Control soil erosion when cover crops are included
- Improves soil structure if grass lay is included

$\frac{1}{2} \times 4 = 2\text{mks}$ (reject if underlined word is missing)

15. Four classes of pesticides according to target pest. (2mks)

- insecticides
- rodenticides
- nematocides
- fungicides

$\frac{1}{2} \times 4 = 2\text{mks}$

16. Ways in which synthetic fertilizer can be classified

Nutrients contained

Mode of application

Time of application

Effect on soil ph.

SECTION B (20 MARKS)

Answer all the questions in this section in the spaces provided.

17 a) identify the practice

Staking

b) Tomatoes

Garden peas

Some varieties of beans

c) Reasons why practice is carried out

Production of clean fruits

Facilitate spraying and harvesting of the crops

Prevent infestation by soil borne pest

Control incidence of disease outbreak

18. The diagram below illustrate investigation on a property of soil using soil samples labeled J, K and L.

(a) Name the property of soil being investigated (1mk)

✓ Soil capillarity 1 x 1 = 1mk

(b) What is the relationship between the soil property above and the size of soil particles? (1mk)

✓ The smaller the size of the particles the greater the force of capillarity.

1 x 1 = 1mk

(c) Which soil sample would be suitable for growing paddy rice? (1mk)

✓ L 1 x 1 = 1mk

(d) Give a reason for your answer in (c) above (1mk)

- Has the highest capillarity/has the highest water holding capacity.

1 x 1 = 1mk

19. The following is a list of nutrients: copper, calcium, nitrogen, molybdenum, zinc, phosphorus, carbon, Sulphur, iron and magnesium. Which of the above nutrients are;

(a) Macro – nutrients (1mk)

✓ Calcium, Nitrogen, Phosphorus, Carbon, Sulphur and Magnesium

(Award 1 mark of all the five macro – nutrients are present. Penalize fully if any of the macro – nutrients is missing.)

(b) Micro – nutrient (1mk)

✓ Copper, molybdenum, Zinc and Iron

(Award 1 mark of all the four micro – nutrient are there)

(c) Fertilizer elements (1mk)

✓ Nitrogen and Phosphorus

(Award 1 mark if the two are present)

(d) Liming elements (1mk)

✓ Calcium, Magnesium and Sulphur.

(Award 1 mark if the three are present)

(e) Primary macro nutrients (1mk)

- ✓ Nitrogen and Phosphorus
(Award 1 mark if the two nutrients are presents)

20.

- a) maize
sorghum
millet
wheat
- b) mice
moles
rats
squirrel
hedgehogs

SECTION C

Answer any two questions in this section in the spaces provided after question.

21.

- (a) Functions of a live fence in a farm. (5mks)
- ✓ Act as windbreak
 - ✓ Some are used as a fodder for the livestock e.g. tick berry
 - ✓ Some may provide edible fruits e.g. Kei apple
 - ✓ Have aesthetic value
 - ✓ Provide security
 - ✓ Mark the boundary when planted on a border lines
- 1 x 5 = 5mks

- (b) Discuss sorghum production under the following (10mks)

a) Ecological requirement

Rainfall requirement is 420mm-630mm per annum thus grows well at attitude below 1500m above sea level

Requires fairly fertile and well-drained soil

b) Varieties

Dobbs

Serena

c) Pests and their control

Sorghum shoot fly-early planting, closed season, use of appropriate insecticide

Birds—use of flame throwers, use of scarecrow

Stem borers-use of appropriate insecticide, proper disposal of crop remains after harvesting

d) harvesting

Takes three months. Heads are cut using sharp knife, sun dried, threshed, winnowed and stored.

c) State five physical method of pest control (5mks)

- ✓ Proper drying of produce
 - Flooding
 - ✓ suffocation
 - ✓ physical destruction of pest e.g. hand picking and killing of pest
 - ✓ use of scarecrow
 - ✓ use of lethal temperature
 - ✓ use of electromagnetic radiation
- 1 x 5 = 5mks

22

(a) Factors that should be considered when siting farm structures (10mks)

- ✓ Size of the farm.
 - ✓ security.
 - ✓ accessibility.
 - ✓ Government policy – this ensures that laws are followed.
 - ✓ drainage.
 - ✓ Direction of prevailing winds
 - ✓ Farmers taste and preference
 - ✓ Relationship between the structures
 - ✓ Proximity of amenities e.g electricity
- 2 x 5 = 10mks

(b) Explain the different ways in which each of the following environmental factors influence crop production.

(i) Wind (5mks)

- ✓ Strong wind increases the rate of evaporation/evapotranspiration/wilting
 - ✓ Help in pollination of crops
 - ✓ Strong winds have a cooling effect which influences rate of physiological processes
 - ✓ Strong winds may cause lodging/destruction of certain crops.
 - ✓ Wind can spread diseases/pests
 - ✓ Used in winnowing/cleaning grains
- 1 x 5 = 5mks

(ii) Temperature (5mks)

- ✓ It affects quality of certain crops eg. pineapple
- ✓ Causes increase in incidences of pests/diseases.
- ✓ Low temperature causes frost injury
- ✓ Influences distribution of crops
- ✓ High temperature increases rate of evapotranspiration hence wilting

- ✓ Influences the rate of physiological processes in crop.
1 x 5 = 5mks

23.

(a) State six roles of trees in soil and water conservation (6mks)

- ✓ Protect soil below from raindrop erosion
- ✓ Provide shade and reduce loss of moisture through evaporation
- ✓ Acts as windbreaks
- ✓ The roots of trees bind soil particles together
- ✓ Reduces spread of running water thus reducing its erosive power
- ✓ The leaves decay to supply humus which improves soil structure
1x6 =6mks

(b) State six benefits of land consolidation (6mks)

- ✓ Proper supervision of land
- ✓ Economic use of time and saving on transport cost
- ✓ Agricultural advice by extension officers is possible
- ✓ Sound farming planning
- ✓ Soil conservation and land improvement
- ✓ Construction of permanent structures is possible
- ✓ Weed, pest, disease control is enhanced

1 x 6 = 6mks

(c) Cultural methods of controlling soil erosion (8mks)

- ✓ Contour farming – cultivation and planting done across the slope hence in holding water thereby increasing infiltration and reducing run off.
- ✓ Mulching covers the soil thereby reducing splash erosion/reduce the speed of run off.
- ✓ Strip cropping – alternating strips of crops that give good soil cover with those that give little soil cover controls movement of soil particles hence control soil erosion.
- ✓ Vegetated water ways – this slows down run off/trap eroded soil particles thereby preventing soil erosion.
- ✓ Afforestation/re-afforestation – trees protect soil from splash erosion by atomizing rain drop/encourage water infiltration/protect soil from wind which could detach and remove soil particles.
- ✓ Intercropping – crops which do not cover soil and crops that have good ground cover should be planted together to prevent splash erosion/surface run off.
- ✓ Minimum tillage –this maintains good soil structure.
- ✓ Cover cropping – this spread over the surface of soil hence protect soil from effects of raindrops.
- ✓ Crop rotation – maintains soil cover for protection against soil erosion/improved soil structure.
- ✓ Correct spacing – this ensures adequate soil cover.
- ✓ Grass strips/filter strips – they are left between cultivated/cropped strips of land to reduce speed of water and filter out trodden soil.

- ✓ Agroforestry – this intercepts raindrops/stabilizes soil acts as wind breaks.
 - ✓ Rotational grazing – this allows grass to recover thus prevent soil erosion.
- 1 x 8 = 8mks

