**AGRICULTURE FORM 3 PP1 MS**

**SECTION A**(30 Marks)

*Answer* ***ALL*** *Questions*

1. State two effects of high temperatures on crop production (1 mark)

* **Increases evaporation leading to wilting in crops**
* **Increases/hastens growth rate in crops**
* **Increases/improves quality of some crops e.g pineapples and oranges**
* **Increases incidence of disease infection and pests**

2. Enumerate four types of farm records kept by farmers (2 marks)

* **Production records**
* **Inventory records**
* **Field operation records**
* **Breeding records**

3. State two varieties of beans grown in Kenya (1 mark)

**-Wairimu, Rosecoco, Mweremoja, Canadianwonder, Haricot, French beans**

4. Highlight four reasons for staking tomatoes (2 marks)

* **Production of clean high quality fruits**
* **Facilitates easy spraying and harvesting of the crop**
* **Control incidences of disease outbreak e.g blight**
* **Prevents infestation by soil borne diseases**

5. List three cultural methods of weed control in crop production (3 marks)

* **Mulching**
* **Cover cropping**
* **Crop rotation**
* **Timely planting**
* **Use of clean planting materials**
* **Clean seed bed**
* **Flooding**

6. Why is it important to top dress a pasture crop? (2 marks)

* **To increase herbage yield**
* **To improve the nutritive value of the crop**
* **To replenish the soil nutrients and ensure proper nutrition**
* **To activate soil micro-organism**
* **To improve chemical / properties such PH**

7. List four methods of drainage (2 marks)

* **Pumping**
* **Cumbered beds**
* **French drains**
* **Underground pipes**
* **Open ditches**

8. State three effects of too much application of Nitrogenous fertilizers in tomatoes (11/2 marks)

* **Prolonged maturity**
* **Cracking of fruits before maturity**
* **Blossom end rot**
* **Excess vegetative growth hence poor fruit formation**

9. State five environmental factors that affect the selectivity and effectiveness of herbicides (2 ½ marks)

* **Wind**
* **Rain**
* **Soil**
* **Light**
* **Temperature**

10. List four general symptoms of viral diseases in crops (2 marks)

* **Leaf chlorosis**
* **Leaf curling**
* **Malformations;stunted growth**
* **Rossets**
* **Excessive branching**

11. State four importances of raising cabbage seedlings in a nursery bed (2 marks)

* **Allow production of many seedlings in a small area**
* **Ease of management practices**
* **Provides optimum conditions for growth of tiny seeds**
* **Enhances selection of healthy, strong seedlings for planting**
* **Excess seedlings can be sold to earn income**

12. Differentiate between aquaculture and apiculture (1 mark)

**-Aquaculture is the rearing of fish in fishponds while Apiculture is the rearing of bees in beehives.**

13. Name two methods used to control weeds in pastures (1 mark)

* **Use of selective herbicides**
* **Uprooting of weeds**
* **Timely land preparations**
* **Slashing**

14. Why is it advisable to apply Nitrogenous fertilisers to maize at knee height (1 mark)

* **At this stage, roots have fully developed**
* **This is the stage the crop is actively growing vegetatively**

15. Give advantages of adding organic matter in the soil. (2 marks)

* **Improves the soil structure**
* **Increases microbial activities**
* **Increases cation exchange capacity**
* **Acts as PH buffers**
* **Adds nutrients to the soil**

16. State four information contained in a land title deed. (2 marks)

* **Size of land**
* **Name of the owner**
* **Date of registration**
* **Seal of registrar**
* **Title number / parcel number**

17. What is agro forestry (1/2 marks)

**-Growing of trees, crops and pasture in the same piece of land**

18. Why is Finger millet rarely destroyed by pests in the stores (1/2 marks)

**-It has small seeds which dry out quickly and insects cannot fit inside**

19. State any two methods of conserving forage (1mark)

* **Hay**
* **Silage**
* **Standing forage**

**SECTION B (20 Marks)**

*Answer* ***ALL*** *Questions*

20. The diagram below illustrates an experiment for capillary action investigation for different soils. Study it carefully and answer the questions that follow

a) Name the type of soil capillary tubes labelled K, L and M (2 marks)

K- **Sandy**

L- **Loam**

M**- Clay**

b) Identify the capillarity tube with suitable soil for rice production (2 marks)

**-Capillarity tube M**

C) What is the relationship between the soil particle size and capillarity (3 marks)

* **The finer the particles, the higher the capillarity of a soil**
* **The larger the soil particles, the lower the capillarity of the soil**

21. A farmer was advised to apply 150 kg CAN/ha while topdressing his maize crop. CAN contains 21% N. Calculate the amount of Nitrogen applied per hectare (3 marks)

**21kgN is contained in 100kg CAN**

**150kg CAN = 21kgN×150kgCAN**

**100kgCAN**

**=31.5kgN/ha**

22. Diagrams B, C and D below show the particles of three sorghum varieties; name them.(3mks

B-**Compact panicle**

C-**Open panicle**

D-**Goose necked**

ii) Which of the three varieties is least likely to be damaged by the birds (1/2 mark)

**-D-goose necked variety**

iii)Give a reason for your answer in (ii) above (1/2 mark)

**-Birds find it difficult to feed on bent panicles**

iv) Give two methods used to control birds in a filed of sorghum (2 marks)

* **Use of scarecrows**
* **Poisoning**
* **Trapping**
* **Use of explosives on breeding grounds**
* **Planting resistant varieties e.g brown red variety**

23. The illustrations below represent types of soil structures. Study them carefully

a)Identify soil structures X and Y above (2 marks)

X-**Platy soil structure**

Y-**Blocky soil structure**

b) Which of the soil structures is not suitable for growing maize (1 mark)

**-X-Platy soil structure**

c) Give one method of improving the soil structure named in (b) above (1 mark)

* **Add organic matter/organic manure**
* **Add liming materials**

**SECTION C (40 marks)**

Answer any two questions in this section

24. Outline the effects of wind on agricultural production (11 marks)

* **Causes soil erosion**
* **Acts as an agent of pollution**
* **Acts as an agent of seed dispersal**
* **Increases rate of evapotranspiration**
* **Causes destruction of crops**
* **Spreads pathogens**
* **Spreads weed seeds**
* **Causes destruction of farm structures**
* **Influences relative humidity**
* **Causes stress by chilling young livestock and crops**
* **Brings rain clouds**

b) Briefly mention the importance of soil organic matter (9 marks)

* **Buffers soil PH**
* **Reduces toxicity of the soil**
* **Improves water infiltration**
* **Improves water holding capacity of the soil**
* **Improves workability of the soil**
* **Increases soil fertility by providing nutrients**
* **Improves soil structure by binding soil particles together**
* **Increases the microbial activities**
* **Darkens the soil colour that affects heat absorption and temperature regulation**

25. a)Describe five different methods of pasture conservation and utilization (10 marks)

* **Hay making, i.e,dried grasses and legumes**
* **Silage making-succulent fodders**
* **Standing forage-set aside for dry season feed**
* **Defoliation to store in stores**
* **Paddocking-grazing animals in one paddock then move**
* **Strip grazing-allow animals to graze on restricted area**
* **Tethering**
* **Continuous grazing-pasture not allowed any resting period**
* **Zero grazing-defoliate and feed directly to animals**

b)State and explain five factors that influence the selectivity and effectiveness of herbicides in weed control (10 marks)

* **Leaf angle more inclined is less susceptible to herbicides**
* **Stage of plant growth-young plants more susceptible**
* **Specialised underground structures e.g. bulbs make them less susceptible**
* **Poor rate of absorption of some plants lowers effectiveness**
* **Different formulation of herbicides affects selectivity**
* **Concentration of the herbicides affects selectivity**
* **Environmental factors such as rain, temperatures and light**
* **Deep roots are less susceptible to herbicides than shallow roots**

26.a)Explain the precautions that should be observed in harvesting pyrethrum (3 marks)

* **Avoid using tins and polythene bags to prevent fermentation**
* **Wet flowers should not be picked to avoid heating up and cause fermentation**
* **Flowers should not be compacted to avoid heating up and fermentation**
* **Put flowers in open woven baskets for ventilation**

b) Briefly describe the advantages of land consolidation as a land reform programme (7 marks)

* **Proper land supervision**
* **There is economic use of time and saving transport cost**
* **Ease of agricultural extension services**
* **Sound farm planning and crop rotation programme**
* **Ease of soil conservation and land improvement**
* **Enables construction of permanent structures,e.g.**
* **Title deed can be used to access loans**
* **Weed, pest and disease control is enhanced**

c) Agriculture is the backbone of Kenya’s economy. Explain (10 marks)

* **It is a source of food hence able to engage in other activities**
* **Provides direct and indirect employment**
* **Source of raw materials for industries,e.g. cotton**
* **Foreign exchange through exporting agricultural produce**
* **Provides market for industrial goods,e.g fertilisers**
* **Source of income after sale of agricultural commodities**