**MARKING SCHEME**

**CASPA 2021**

**AGRICULTURE PAPER 1**

1. a)
* small farms
* Huge capital ½ each (1mk)
* Skilled labour
* Produce for sale
* Mechanization done

b)

* High yields per unit area
* Proper use of soil resources ½ each (1mk)
* Guards against total loss
* Improves the soil nutrient content
* Improve soil structure ½ each (1mk)
* Improves soil temperature

Low Temperature

* Slow growth rate
* High incidence of diseases of CBD ½ each (1mk)
* Improves quantity

High Temperature

* Causes wilting ½ each (1mk)
* Increases growth rate
* Increase in pests attack
1. a)

 Test or presence of soil micro-organisms ( ½ mk )

A - Lime water turns milky

B- Lime water remains clear ½ each (1mk)

Presence of organisms in A produce CO2 that turns lime water milky. (1mk)

* -Crop to be planted
* Implement available 3 × ½ ( 1 ½ mks )
* Type of soil
* Nature of the land
1. a)

 Situation in which least possible cultivation operations are carried out in crop production (1mk)

1. - Planting in another crop field
* -Clearing f land then plant 4 × ½ (2mks)
* Use of herbicides to kill weeds
* Planting on stubble land
* Surface irrigation- Flood irrigation
* Sub-surface irrigation e.g underground pipes 2 × ½ (1mk)
* Overhead irrigation – eg sprinkler
* Irrigation
* Watering canals
* Domestic use 4 × ½ (2mks)
* Diluting chemicals
* Construction works
* Processing produce
* Show next date of treatment/vaccination 3 × ½ ( 1 ½ mks )
* Occurrence of diseases
* Response to diseases

Diagonal/Transverse ½ mk

* Avoid contaminants ions/use sterilized containers
* Avoid unusual sites e.g. Anthills 3 × ½ ( 1 ½ mk)
* Avoid mixing p soil and sub-soil
* Collect at the correct depth
* Determine nutrient content
* Determine soil PH/ Fertilizer to be used 4 × ½ (2mks)
* Determine mineral deficiency
* Expected yields
* Break dormancy
* Control pests and Diseases 2 × ½ (1mk)
* Faster germination/uniform stand
* Type of soil
* Moisture in the soil 2 × ½ ( 1mk)
* Species of Beans
* Machinery used
* Purpose of Beans
* Stored of beans
1.
* Security for loans
* Security of land ownership 4 × ½ (2mks)
* Minimize disputes
* Encourage farmer to invest
* Wires
* Stones 3 × ½ ( 1 ½ mks )
* Concrete (sand/cement/gravel)
* Wood/metal rods/pegs.
* Damage crop roots e.g. Nematodes
* Uproot planted seeds
* Attack fruits e.g. fruit flies
* Transmit diseases 4 × ½ (2mks)
* Causes retarded growth
* Destroy leaves
* Training
* Giving
* Supervision
* Good Human Relations 4 × ½ (2mks)
* Assigning tasks
* Proper motivation

**SECION B**

16.

**Cropping** - removal of fish of marketable size from the pond

**Harvesting** – removal of all fish from the pond

Mark as a whole 2 ×1= 2 marks

* Forage spp
* Stage o harvesting 3 × 1 ( 3mks)
* Mode feeding
* Type of forage (mixed/pure stand)
1. **Characteristics of extensive farming systems**
* Large tracts of land
* Low capital investment
* Low labour per unit area
* Low yields per unit area
* Stage of growth
* Plant thropology 2 × 1 ( 2mks)
* Mode of action
* Environmental contributions
* Forage Spp
* Stage of harvesting
* Length of drying 2 × 1 ( 2mks)
* Weather conditions
* Storage conditions
1. 21. **Physical factors in soil formation**
* Wind
* Water
* Moving ice
* Temperature

22. **Factors that determine depth of planting**

* Soil type
* Soil moisture content
* Size of the seed
* Type of germination

23. **Harmful effects of ticks on livestock**

* They suck blood leading to anaemia
* They cause wounds that lead to secondary infection
* They transmit livestock diseases
* They cause irritation to the animal
* They lower the value of hides and skins

**SECTION C**

1. a)
* Timely planting- Early planting makes crop escape pest attack e stalk borer.
* Timely harvesting- storage pests may attack crop in the field e.g. weevils.
* Proper Tillage- field cultivation exposes pests which are soil borne e.g. white grubs, scorched by soln.
* Close season- planting of crops in a certain season to avoid pest attack cotton Bollworm
* Trap cropping- plant a crop and destroy once attacked by pests
* Crop rotation- Alternate crops which are attacked by different types of pests eg Groundnuts and potatoes attacked by Nematodes with maize and beans
* Plant resistant varieties- breeder develops breeds which are resistant to some diseases. e.g. goose necked sorghum against Bird pests.
* Field Hygiene- keeps the field free from pests. Removal of infected plants from the field.
* Destruction of alternate hosts- some weeds act as alternate hosts for pests.
* Crop nutrition - makes crops strong and resistant to pests 1 × 10 (10mks)

b)

* Use of soil moisture- crops will use the available moisture in the soil.
* Soil Nutrients- plants will benefit from the Nitrogen Flush
* Market prices- Early planting will make the produce benefit from the early market prices.
* Pests and diseases- Early planting makes the crops escape the pests and diseases which are soil borne
* Crops vigour- Early planting enable the crops to growth with vigor(strong and uniform)
* Timely harvesting- Early planting makes harvesting take place early

 State 1 mk Explain 1 mk ( 10mks )

1. a)
* Measurement of land to establish sizes by recommended surveyors
* Description of land- shows its location
* Recording and mapping of land in the land registry. 1 × 5 ( 5mks )
* Resolving any objections if raised
* Submission of the records for registration
1. Issuing of the land title Deed **Reasons for carrying out minimum tillage**
* To maintain soil structure
* To conserve soil moisture
* Prevent humus exposure
* Prevent root disturbance
* Control soil erosion
* Reduce cost of cultivation

 6× 1= 6 marks

1. **Ways soil lose fertility**
* Leaching – nutrients carried to lower zones by infiltrating water leads to loss of fertility.
* Soil erosion – carrying away of top fertile soils by erosion agents loss of soil fertility.
* Mono cropping – growing one crop continuously on the same piece of land results in exhaustion of nutrients thus loss of soil fertility.
* Continuous cropping – harvested crops remove large amounts of nutrients from the soil which makes soil deficient of this nutrients.
* Burning vegetation cover- burning destroys organic matter and soil structure.
* Change in soil pH – due to use of fertilisers leads to change in soil pH thus affect activity of microorganisms.

 (First 4; mention 1 mark, well explained 1 mark)

 4 ×2= 8 marks.

1. **A.Field management practices in tomatoes**
* Gapping
* Topdressing
* Weeding
* Staking

**b.Factors that determine water requirements in an animal’s body**

* Ambient temperature
* Type of feed eaten by animal
* Level of production
* Body size
* Species of the animal
* Amount of work

 5×1= 5 marks

**c.Transplanting tree seedlings**

* Dig holes for transplanting
* Transplant at onset of rains
* Water the seedlings a day before transplanting
* Place seedlings at the centre of the hole
* Cut and remove polythene sleeve using a sharp knife
* Add soil around the tree until the hole is filled completely
* Firm the soil gently around the tree seedling
* Plant at the same depth as it was in the nursery.
* Change in soil pH – due to use of fertilisers leads to change in soil pH thus affect activity of microorganisms.

 (First 4; mention 1 mark, well explained 1 mark)

 4 ×2= 8 marks.

* Pest control
* Disease control

 7×1 = 7 marks