**SET 7**

**AGRICULTURE**

**PAPER 1**

**MARKING SCHEME**

1. - Pollinators
* Predators
* Decomposers
* Nitrogen fixing Bacteria (4$×$½ = 2 marks)
1. - Mulching
* Crop Rotation (1$×$½ = 1 mark)
1. - Alum ?(Aluminum sulphate
* Soda ash (sodium bicarbonate)
* Chlorine (½$×$3 = 1½ marks)
1. - Have a residual (roots) effects
* Not easily leached (2$×$½ = 1 mark)
1. - Neat
* Concise
* Complete
* Actual (4$×$½ = 2 marks)
1. i) Seed dressing is the coating of seed with a fungicide or insecticide or both to protect seedlings from soil borne pests and diseases.
2. Seed inoculation is the coating of legume seeds with the right strain of ;Rhizobia bacteria to enable fix free atmospheric Nitrogen into the soil
3. Chitting – putting potato sets in a partially dark room to break their dormancy (3$×$½ = 1½ marks)
4. i) Rooting of regenerated plantlets

 ii) hardening the plantlets

 iii) Convert plantlets from heterotrophic mode of feeding to Autotrophic state (3 $×$½ = 1½ marks)

1. i) Land tenure reform

 ii) land consolidation

 iii) Land adjudication and registration

 iv) Settlement and resettlement (4$×$½ = 2 marks)

1. i) Weirs

 ii) Dams

 iii) Ponds

 iv) Roof catchment (4$×$½ = 2 marks)

1. i) Have elaborate or extensive root system useful in supporting the plants

 ii) Able to survive in areas with limited nutrients

 iii) Some have short life cycle hence able to complete life cycles two times in one seasons (3 $×$½ = 1½ marks)

1. i) Stomach poisons – This is the pesticide which kills the part of the pest sprayed or dressed.

 ii) Systemic poison – The chemical circulates to all parts of the pest once eaten, killing the pest

 iii) Contact poisons is chemical kills the pests when it is absorbed into the body through the skin or cuticles

 iv) Suffocates the chemical which interferes with the breathing system of the pest (4$×$½ = 2 marks)

1. i) White leaf Blight

 ii) Maize streak

 iii) Rust

 iv) Smut (4$×$½ = 2 marks)

1. i) From high quality forage crop

 ii) Have a P.H of 4.2 or below

 iii) Have 5% - 9% lactic acid

 iv) - free from moulds

* Have green to yellow color
* Have a fine texture (4$×$½ = 2 marks)
1. i) Own saving

 ii) Credit facilities e.g. Banks

iii) Grants (3 $×$½ = 1½ marks)

1. **Four financial books used in farm account**
2. Ledger
3. Inventory
4. Cash book
5. Journal (4$×$½ = 2 marks)
6. i) Farmer/ producer co-operatives

 ii) Marketing co-operatives

 iii) Consumer co-operatives (3 $×$½ = 1½ marks)

1. i) Supply

ii) Demand (2$×$½ = 1 mark)

1. i) Fast/ quick growth rate

 ii) Deep rooted

 iii) Nitrogen fixing

 iv) Good in production of by-products (4$×$½ = 2 marks)

**SECTION B (20MKS)**

a)

1. Prismatic
2. Platy (2 $× $1= 2 marks)

b) A- In arid and semi-arid soils

 B- Top horizon of forest and clay soils (1$×$1 = 1 mark)

c) - Determining the type of crop to be grown

 - Determine the water holding capacity

 - Determines aviation and drainage of the soil (3$×$1 = 3 marks)

a) Drip irrigation (1 $×$1 = 1 mark)

b) - Discourages fungal diseases

 - No growth of weeds between rows

 - Economical on water use (2 $× $1= 2 marks)

c) - More labor needed

 - Requires clean water

 - Cannot be used in large scale (2 $× $1= 2 marks)

**a) Identify of weeds E, F, and G**

 E- Thorn apple – *Datura stramonium*

 F- Double thorn – *Oxygerium sinuatum*

 G- Couch grass- *Digetaria* *scalarum* (3 $×$½ = 1½ marks)

**b) Three harmful effects of weed**

* weeds complete with crops for nutrients, space, light etc – therefore reducing crop yield
* weeds reduce the quality of farm produce
* some weeds are poisonous to livestock and human beings e.g. Thorm apple
* some weeds cause irritation to farm workers, thus reducing labor efficiency
* weeds interfere with machinery during farming processes such as harvesting
* weeds increase the cost of production since they have to be controlled
* weeds harbor pests and diseases e.g. Exalis harbours maize rust
* aquatic weeds such as water hyacinth block water ways
* some weeds are allelepathic they produce compounds that suppress growth of crops.
* Some weeds are parasitic to cultivated crops e.g. witch weed

 (3 x ½ = 1 ½ marks)

**c) Two safety precaution observed to protect user and environment when using herbicides**

* User should avoid herbicide drift to unitended crops and other plants
* Drift on animals feed and water should be avoided
* User should avoid spilling herbicides in places which are unitentended and where they may not cause danger to animals
* Any left over and empty containers must be properly disposed of i.e. by burying them
* Spraying equipment must not be washed in water sources which are used by animals and humans
* All chemicals must be stored in safe places out of the reach of children and away from food
* Equipment used in spraying herbicide must be thoroughly washed

 (2 x ½ = 1 mark)

**d) Effects of weed labeled E to livestock**

 It is very poisonous to livestock (1 x 1 = 1 mark)

**e) Reasons why it is difficult to control weed G**

 Because it has well developed underground rhizomes (1 x 1 = 1 mark)

a) M- Demand curve ✓ ½

 N- Supply curve ✓ ½

b) - Equilibrium Brice ✓1

c) - Low demand of the commodity

 - High prices of the commodity (2 $×$ 1 = 2 marks)

**a) Factors affection rooting of cutting**

* temperature
* relative humidity
* light intensity
* oxygen supply
* chemical treatment
* leaf area (5 $×$ 1 = 5 marks)

**b) State and explain human factors influencing Agricultural production**

* level of education and technology
* health HIV/AIDS and health in general
* economy (level of economic development
* government policy
* transport and communication
* cultural practices and religion beliefs
* market forces

 Stating (1mk)

 Explaining briefly (1mk) (2 $×$ 5=10 marks)

c) **Management practices carried out in a nursery**

* mulching
* watering
* weed control
* pricking out
* shading
* pests and diseases control
* hardening off (5 $×$ 1 = 5 marks)

 a) i)

|  |
| --- |
| Nguuni farm |
| Balance sheet as at 31/12/2013 |
| Liabilities  | Assets  |
| Long term liabilities Loan payable to Bank Current liabilities Debt to co-oparative Bonus payable to workers Breakage and repair Total liabilities Net worthy  | 300,00020,00019,00030,000369,000685,0001,054,000.000 | Fixed assets Building Cows Layers Goats Spray equip Current assets Cattle feed in store Debts receivable Drugs in store Cash at hand Cash in bank Total assets  | 600,000250,00080,00030,00020,00010,00018,0004,00020,00030,0001,054,000.001,054,000.000 |

 NB Correct title entry ½ $×$ 18 = 9 marks)

 ii) The business was solvent

 b) i) - Time wastage

 - Difficult to control weeds.

 - Difficult to plan the farm

 - Difficult to offer Agriculture extension services

 - Difficult to control parasites pests and diseases

 (1 $×$ 5 = 5 marks)

 c) i) - Reduces lifespan of parasites

* Compete for nutrients
* Lowers pasture quality
* Some are poisonous to livestock
* Increases establishment period (1 $×$ 5 = 5 marks)

a) - Leaching

* Soil erosion
* Monocropping
* Continuous cropping
* Change in soil PH
* Burning of vegetation
* Accumulation of salts

 NB State any five ( 1 mark) , correct explanations (1 mark) (Total 10 marks)

b) - Highly soluble in soil water

 - Highly leached

 - Have a short residual effect

 - Has a scorching / Burning effect

 - Highly volatile

 - Hygroscopic

 - Highly corrosive

 Correct explanation (1 mark) In total (5 marks)

c) - Broad casting

 - Placement method

 - Side dressing

 - Foliar spraying

 - Drip

 Correct explanation (1 $×$5 = 5 marks)