**EXAM 2021**

**AGRICULTURE FORM TWO MARKING SCHEME**

1. What is soil fertility? (1mk)
* **This is the ability of soil to provide all the required plant nutrients to crops in the proper portion.**
1. How can soil lose fertility? (4mks)
* **Soil Erosion**
* **Leaching of nutrients**
* **Change in soil PH**
* **Mono cropping**
* **Accumulation of salts**
* **Burning of land**
* **Weeds infestation**
1. Name the Major Macro nutrients (2mks)
* **Nitrogen, Phosphorous, Potassium, Calcium, Magnesium, Sulphur**
1. State two roles and two deficiencies of the following plant nutrients;
2. Nitrogen (4mks)

Roles Deficiency

* **Protein synthesis - Chlorosis (leaf)**
* **Part of chlorophyll - Stunted growth**
* **Vegetative growth - Premature leaf fall**
* **Increased grain size - Very short roots**
1. Phosphorous

Roles Deficiency

* **Shoot growth -Poor root development**
* **Root growth and development - Delayed maturity**
* **Seed formation - Purple leaves formation**
* **Protein and enzyme formation**
1. What is soil sampling? (1mk)
* **Taking a small representative quantity of soil from an area for testing.**
1. List the methods of soil sampling. (2mks)
* **Traverse / diagonal pattern**
* **Zigzag / random collection**
1. Describe the procedure of soil sampling (6mks)
* **Clear the vegetation**
* **Make a vertical cut and scoop soil 15-25 cm deep**
* **Take soil from many places**
* **Mix all soils thoroughly**
* **Break up soil clods**
* **Take a sample and label to take to the laboratory**
1. State four deficiency symptoms of potassium (2mks)
* **Lodging of stems**
* **Leaf chlorosis**
* **Scorching of tips and margins**
* **Premature leaf fall**
* **Brown spots on leaves**
* **Stunted growth**
1. List the common organic manures (2mks)
* **Farm yard manure**
* **Green manure**
* **Compost manure**
* **Organic mulches**
1. State four properties of Nitrogenous fertilizers (2mks)
* **Highly soluble in water**
* **Have a scorching effect**
* **They are volatile**
* **Hygroscopic**
1. List four methods of fertilizer application (2mks)
* **Broadcasting**
* **Row application**
* **Top dressing**
* **Side dressing**
* **Foliar spraying**
1. Name two types of large scale farming (1mk)
* **Plantations**
* **Ranching**
1. State the soil properties influenced by texture (2mks)
* **Aeration / Porosity**
* **Drainage**
* **Water holding capacity / capillarity**
* **Stickiness**
* **Cation exchange capacity**
1. Name the 5 categories of tools and equipment (2 ½ mks)
* **Garden tools and equipment**
* **Livestock production equipment**
* **Workshop equipment**
* **Masonry equipment**
* **Plumbing equipment**
1. List the major types of irrigation (2mks)
* **Overhead**
* **Sub surface**
* **Surface**
* **Drip / trickle**
1. Give five characteristics of indigenous cattle (2 ½ mks)
* **Humped**
* **Produce less milk**
* **Resistance to tropical diseases**
* **Hardy**
* **Can withstand tropical heat**
* **Late maturing**
1. Study the processes of chemical water treatment below and answer the questions that follow.



1. Identify the parts labeled; (2mks)

A – **Softening of water at mixing chamber**

B – **Coagulation and sedimentation**

C – **Actual filtration**

D – **Chlorination**

1. State two chemical substances added at part labeled B and give their functions (2mks)
* **Alum / Aluminium Sulphate – Cause coagulation of particles in water**
* **Soda ash / sodium bicarbonate – Softening of water**
1. State two factors which influence the quantity of the chemical used in part labeled D. (2mks)

Chlorine added depends on:

* **Outbreak of water borne diseases**
* **Quantity of water to be treated**
1. Give two uses of water in crop production (2mks)
* **Irrigation**
* **Solvent of nutrients in crops**
* **Processing of crop produce e.g. carrots**