SET 10 AGRICULTURE PAPER 1

1. Characteristics of shifting cultivation

* When soil fertility goes down crops are not grown until fertility is regained
* Applicable where there is planting of land
* Practicable with annual crops
* Agrochemicals are rarely used

1. Reasons why a well-drained soil is suitable for crop production

* Easy to work on
* Suitable for microbial activities
* Enhances good soil aeration for root respiration
* Raises soil temperature suitable for crop growth

1. Factora that determine the depth of ploughing

* Type of crop to be grown
* Type of implement available
* Soil moisture content at ploughing time
* Presence of deeply rooted weeds

1. Advantages of overhead irrigation over surface irrigation

* Water is evenly distributed over the required area
* Less water is used
* Leveling of land is not necessary
* Soluble fertilizer can be applied with irrigation water.

1. a) Law of demand

* The quantity of the product demanded various inversely with the price, as the price declines the corresponding quantity demanded rises and as the price increases the corresponding quantity demanded falls

b) Factors determining the demand of a commodity in a free market

* Advertisement
* Price of related goods
* Level of income
* Taste and preference of the consumers

1. Ways in which plant nutrients may be lost from the soil

* Leaching
* Soil erosion
* Burning of the land
* Fixation of nutrients

1. a) Difference between macro and micro nutrients

* Macronutrients are those nutrients required by plants in large quantities which micro nutrients required by plants in small quantities

b) Functions of calcium in plant growth and development

* Strength plant cell wall
* Help in protein formation
* Help in formation of the middle lamella
* Used in cell division

1. (i) Cash account

* This is an account in a cash book where receipt of cash is debited and the payment of cash is credited.

(ii) Ledger

* The principal book of account in which the entries contained in all other books are entered

(iii) Balance sheet

* A financial statement that shows all assets and liabilities at a particular date

(iv) Purchase order

* A financial document used for requesting for supply of goods/services on credit

1. Factors influencing spacing when planting a pure stand maize

* Method of planting
* Variety of maize
* Purpose of the crop
* Soil fertility

1. Reasons for pruning fruit crops

* Allow adequate light penetration
* Improve quality of the fruits
* Reduce incidence of pest and diseases attack
* Enable effective use of chemical sprays

1. Ways in which a farmer can make effective use of a pasture crop

* Controlled grazing/rotational grazing
* Proper stocking rate
* Conserve excess pasture
* Timely defoliation

1. Characteristics of a good root stock for grafting

* Free from pests/diseases/should be healthy
* Resistant to diseases
* Adaptable to different soil PH
* Compatible with several scions

1. Factors considered when grading tomatoes for fresh market

* Degree of ripeness
* Damage of tomatoes
* Shape of fruits
* Size of fruits

1. Ways through which checkdams control soil erosion

* Reduce the speed of water hence its erosive ability
* Trap soil being carried by moving water
* Increase infiltration of water hence reduce surface run off

1. Uses of gross margin analysis in farm business

* To compare the performance of one farm with another
* To compare the performance of the farm between one season and another.
* To compare the contribution of one enterprise and another on the same farm.
* Act as a measure of profit in a farm.

1. a) A – Couch grass

B – Oxalis

b) Why is it difficult to control weeds A and B

* A - has underground structures known as rhizomes
* B – has underground structures known as bulbs

c) Economic importance of weeds illustrated

* Competes for nutrients with crops greatly reducing yields
* Increases production costs
* Acts as a fodder for livestock

1. a) Bean fly

b) Cultural methods of controlling the pest illustrated

* Crop rotation
* Early planting
* Destruction of affected residues

c) Other pests that attack beans

* Bean aphids
* American bollworm

1. a) Alley cropping/hedgerow intercropping

b) Benefits of the above agroforestry practice

* Leguminous species of trees boost the fertility of soil by fixing nitrogen
* Trees shade the plants and reduce the rate of evapotranspiration
* Leguminous trees act as fodder for livestock

c) Sites for agroforestry trees

* Along the boundaries
* Along the fence lines
* On sloppy land

1. a) Examples of joint products in livestock

* Milk and butter
* Beef and hide
* Honey and wax
* Mutton and wool
* Pork/bacon and bristles
* Rabbit meat and skin/pelts
* Mutton and skin

b) Variable inputs in poultry production

* Feeds
* Pesticide
* Replacement stock
* Veterinary services
* Drugs
* casual labour
* Packing materials

c)(i) V=48-39=9

2-1

W= 32-27=5

4-3

X=23-21=2

6-5

Y=20-19=1

8-7

(ii) L.C.C occurs where MRS = price inverse ratio

L.C.C –MRS=PX1

PX2

Where =change

P=Price

X1=Dairy meal

X2 =Homemade feed

8/2=4

L.C.C is where MRS =4 i.e. where 5 units of dairy meals are mixed with 23 units of homemade feed

d) Activities undertaken in organic farming

* Mulching
* Cover cropping
* Intercropping
* Crop rotation

1. a) Roles of agriculture in economic development

* A source of food
* It is a source of employment
* It’s a foreign exchange earner for the country
* It’s a source of raw materials for industries
* It provides a market for industrial goods

b) Measures taken to minimize water pollution

* By avoiding cultivation along water sources as rivers
* By avoiding cultivation during dry/windy periods
* Prohibiting excessive use of agrochemicals
* Fencing of water sources
* By using integrated pest management(IPM) systems
* Practicing soil conservation measures
* By substituting or use less toxic or less persistent or less leachable or biodegradable pesticides
* By using efficient pesticides
* By planting vegetation along the river banks

c) Various land tenure systems practiced in Kenya

* Leasehold/landlordism/tenancy
* Company/concession
* Individual ownership/individual owner operator
* State ownership/government ownership
* Cooperative land tenure

1. a) Management practices carried out on a vegetable nursery after sowing seeds

* Mulching to conserve soil
* Erection of shade to minimize over transpiration
* Weed control to reduce competition with seedlings for nutrients
* Pest and disease control to ensure healthy and vigorously growing seedling
* Watering to ensure adequate moisture supply
* Removal of mulch immediately after germination
* Fertilizer application to supplement nutrients in the soil

b) Precautions observed when harvesting cotton

* Sisal bags/gunny bags should not be used to prevent mixing of lint and sisal fibres which causes gunning problems
* Hands should be cleaned to avoid staining of the lint
* Picking should be done when the lint is dry to prevent fibres from sticking together
* Use of clean containers for picking
* Use different containers for AR(safi) and BR(fifi) grades of cotton to ensure quality
* Picking should be done immediately the balls open/split to prevent staining by dust/dirt.
* Avoid picking leaves and twigs to avoid contamination

c) Improve maize production

* Provision of extension services to advise farmers on modern maize production techniques
* Provision of subsides on farm inputs
* Provision of credit facilities
* Imposing high taxation on imported maize and maize products to discourage importation and protect local farmers.
* Quality control to ensure production of high quality maize that can attract foreign markets
* Supporting research into new and improved varieties of maize for high yields
* Farm input supplies
* Provision of market services
* Provision of drying and storage facilities
* Provision of hire tractor services