**AGRICULTURE**

**KASSU P1 MARKING SCHEME**

1 Characteristics of intensive farming system,

* Involves maximum utilization of all available land
* High yields per unit area
* High labour utilization/ much use of manual labour
* Some little mechanization is used
* Crops may be planted twice or thrice in one year.
* Heavy application of manure and fertilization.
* Use of modern technology i.e irrigation is normally used to make up for inadequacy of moisture.

( ½ x 2 = 1mk)

b) Advantages of mixed farming;

- makes utilization of the available land

- there is diversification of farming business

- there is mutual benefit between crops and animals

- Farmer gets continues flow of income through out the year

- There is maximum use of permanent labour through out the year.

- Farmer gets high income

- Farmer and his family gets a balance diet

- There is better conservation of soil and water

( ½ x 2 = 1mk)

2 Agents of Physical weathering;

* Wind
* Water
* Moving ice
* Temperature

( ½ x 3 = 1 ½ mks)

3 Forms in which water is available in the soil;

* Superfluous water
* Hycrosgopic water
* Capillary water

( ½ x 2 = 1mk)

4 ways in which mulch control soil erosion;

* Reduce speed of surface run – off
* Insulates the soil reducing direct conduct between the soil and the agents of erosion.

( ½ x 2 = 1mk)

5 Advantages of drip irrigation;

* Little amount of water is required as compared to other types of irrigation
* Water under low pressure can be used so long as it can flow along the pipe
* It discourages fungal diseases i.e blight , CBD and others, as it does not wet the leaves
* It does not encourage the growth of weeds between the rows

( ½ x 4 = 2mks)

6 Advantages of adding organic matter to Sandy soil;

* Improved soil structure by binding together soil particles
* Improves microbial activities in the soil
* Increase the nutrient level/ fertility of sandy soil
* Impert dark colour to the soil which hel increase soil temperature
* Improves water retention capacity
* Increase soil cation –m exchange capacity , hence PH control
* Reduce leaching

( ½ x 4 = 2mks)

7 - plants mature early

* It is possible to produce crops that would otherwise not be propagated through other means like use of seeds
* Its possible to use root stock with cetain beneficial traits such as drought and disease resistance.
* More than one type of plant variety can be produced on the same rootstock
* It makes possible to repair damaged plant parts,
* Crop variety obtained may have higher /more desirable qualities in terms of taste and size.

( ½ x 4 = 2mks)

8 Reasons for using certified seeds for planting;

* Certified seeds have high germination percentage
* They are free from diseases and pests
* They give high yields
* Able to adopt to certain ecological conditions
* Bred true to type
* Free from foreign materials
* Free from physical damage

( ½ x 4 = 2mks)

9 Methods used to control weeds in pasture;

* Use of herbicides
* Slahiing / mowing/tillage
* Uprooting

( ½ x 3 = 1 ½ mks)

10 Reasons for conserving forage;

* To avoid wastage in times of planting
* To ensure enough supply throughout the year
* To earn income from selling excess forage
* To ensure good utilization of land.

( ½ x 2 = 1mk)

11 Types of labour records;

* Master roll
* Labour utilization analysis record

( ½ x 2 = 1mk)

12 CAUSES OF LAND FRAGMENTATION;

* Inheritance of land from different people
* Purchasing of land in different locations
* Compensation by government

13 Roles of trees in soil and water conservation;

* They protect the soil below from rain drop erosion by reducing the force from which it falls onto the ground.
* Prevent direct conduct between rain drops and soil
* Provide shade and reduce loss of moisture through evaporation
* Act as wind breaks
* Roots of trees bind soil particles together
* Leaves once they drop, decay to supply humus which improve water infiltration

( ½ x 4 = 2mks)

14 Reasons for earthing up tobacco crop;

* To improve drainage around the plant
* To improve the plant anchorage

( ½ x 2 = 1mk)

15 Labour productivity can be improved through;

* Training labour force
* Efficient supervision of labour
* Mechanization of farm operations or providing more efficient tools and equipment
* Giving incentives to workers i.e good housing, medical facilities etc
* Proper remuneration of workers
* Assigning tasks to workers according to skills ability and interest.
* ( ½ x 3 = 1 ½ mks)

16 Examples of working capital;

* Seeds
* Fertilizers
* Hired equipment
* Pesticides/ Insecticides
* Fuel
* Fungicides
* Herbicides

( ½ x 3 = 1 ½ mks)

17 (a) Reasons why nitrogenous fertilizers are suitable for top-dressing;

* Easily leached to lower levels /horizons beyond the root zone of crops before it is utilized by plants
* Highly soluble in water, hence gets dissolved very fast

( ½ x 2 = 1mk)

b) Defficiency symptoms of sulphur;

- leaf chlorosis

- thin stems

- reduced nodulation in leguminous plants

- stunted growth in plants

- delayed maturity.

( ½ x 4 = 2mks)

18 Symptoms of stalk borer infestation in maize;

* Windowing on leaves/ make holes on leaves
* Bore into stems and cobs
* Cause yellowing in seedlings
* Cause tillering in seedlings
* Plants of damged stems fall off

( ½ x 4 = 2mks)

SECTION B (20 Marks)

19 a) (i) Double thorne - (1mk)

(ii) Harmful effects of the weed;

* Its thorns lower the quality and palatability of pasture / cause injury to livestock
* It irritates workers, thus reducing labour efficiency
* It competes with crops for nutrients, light and space
* It increases the cost of production.

( 2 x 1 = 2mks)

b) Reasons why tillage is some times preferred as a method of weed control

- - loosens the soil/ improves aeration and water infiltration

- it facilitates earthing up in rood crop production

- Crop residues are incorporated into the soil

- It helps control soil – borne pests through exposing them on the surface.

( 2 x 1 = 2mks)

20 (a) plant population is = Area of land x Number of seeds per hole

Spacing of the crop

= 10,0000m2 x 2 =

0.75 m x 0.25m

(Award 1 mk for the formula, 1mk for the calculation and 1mk for correct answer).

(b) Reasons for having correct plant population;

- Leads to high yields

- makes it easy to control pests, diseases and weeds

- It conserves soil and water/controls soil erosion.

- It facilitates field operations to be carried with ease

- It leads to efficient use of resources.

( 2 x 1 = 2 mks)

1. a) - (i) Soil profile (1mk)

(ii) A- Top soil (horizon A)

* B – Sub – soil ( Horizon B)
* C – Substratum/weathered rock (Horizon C)
* D – Parent rock/Bed rock (Horizon D)

( ½ x 4 = 2 mks)

(iii) Reasons why farmers should have knowledge of the illustration above;

* Able to determine the type of crops to grow
* Enable the farmer be able to determine the depth of ploughing
* Enable the farmer to choose the implement to use during the time of ploughing
* (1 x 2 = 2mks)

22 (i) The disease is Blight/Late blight (1mk)

(ii) Category of the disease is Fungal disease. (1mk)

(iii) Three control measures of the disease above

* Spray the crop with appropriate fungicides
* Use certified seeds
* Practice crop rotation
* Practice close season
* Observe field hygiene/ destroy infected crops
* Do rogueing.

( 1 x 3 =3 mks)

**SECTION C (40 Marks)**

23 (a) Seedbed preparation;

* Clear land
* Plough the land early /during the dry period or before onset of rains and remove all all perennial weeds.
* Seedbed be harrowed to the right tilth
* Plough it to the right depth
* Seedbed preparation is done manually or mechanically.

1. x 3 = 3mks)

(ii**) Planting;**

* Select suitable maize variety for the region
* Plant at the onset of then rains
* Plant seeds at the right depth i.e 2.5 cm to 10 cm depending on the moisture content of the soil.
* Spacing is 75cm to 90cm by 23cm to 30cm. this will give correct crop stand per hectare.
* Plant one to two seeds per hole depending on the spacing.
* Plant certified seeds or health seeds.
* Apply appropriate fertilizer or well decomposed manure.

(1 x 5 = 5mks)

(b) Six marketing functions;

* Buying and Assembling; acquisition of goods from farmers on payment of cash and collecting the produce from farmers. The products are are assembled or stored at a convenient points or stores.
* Transportation and distributing; farm produce are availed to consumers through transportation. The goods are distributed through middlemen who at times store, blend and package the goods.
* Storage after harvest to minimize losses.
* Processing to provide variety, increase value and prolong shelf life of produce.
* Grading according to quality.
* Packaging and packing for easier handling, transportation and storage.
* Collecting, analyzing and interpreting market information.
* Advertising to create or increase demand.
* Bearing risks such as damage, price fluctuations and physical deterioration.
* Taking measures to protect farm produce, for example by taking insurance cover.

**( 6 x 2 = 12 mks for any well explained point)**

24 (a)(i) Precautions taken during harvesting of pyrethrum;

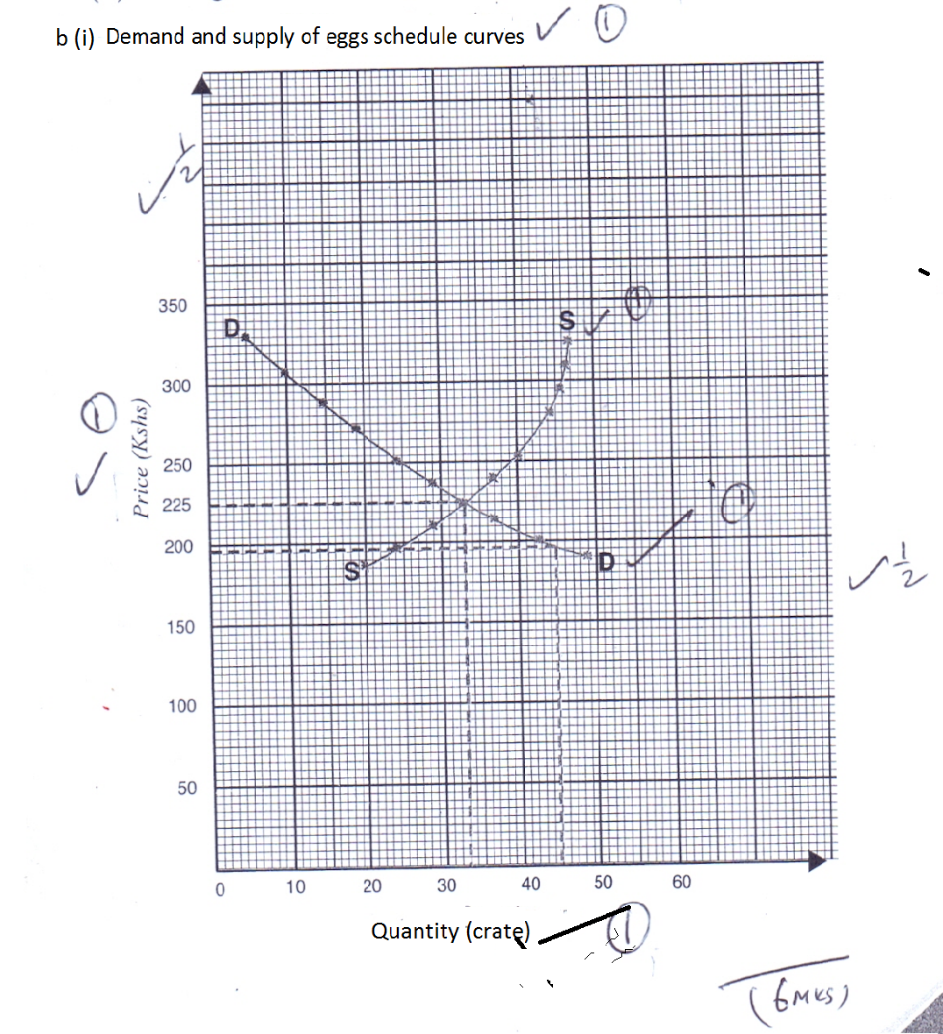
* Picked flowers should be put in open woven basket to allow proper aeration/ventilation.
* Tins or polythene bags should be avoided because of poor ventilation that would lead fermentation.
* Wet flowers should not be picked because they may heat and ferment before they are dry.
* During picking flowers should not be compacted in the baskets to avoid heating up and fermentation.
* Avoid any contamination or picking flowers with twigs or leaves be avoided.
* Dry flowers immediately after picking to a moisture content of 10% to 12% to prevent fermentation.

( 1 x 3 = 3mks)

(ii) Factors that affect rooting of cuttings;

* Temperature: warm temperature encourages fast rooting of cuttings as opposed to low temperature.
* Relative humidity: high relative humidity lowers transpiration rate, which favours fast rooting.
* Light intensity: lack of light encourage rooting in hardwood plants while high light intensity enhances rooting in softwood plants.
* Oxygen supply: well aerated rooting medium encourages faster rooting.
* Moisture supply: The root- forming process requires ample supply of moisture.
* Chemical treatment: Rooting hormones, when applied at the base of cuttings fasten rooting process.
* Leaf area: Some cuttings require some leaves for photosynthesis to speed up rooting.

( 1 x 5 = 5mks)



(ii) Equilibrium price is Ksh. 225.

(iii) Factor that influence demand of eggs in a market are;

* Population size
* Income of the consumers.
* Price of related goods
* Tastes and preferences
* Beliefs, customs, taboos.
* Advertisement
* Level of taxation/income
* Price expectations
* Perishability.

(1 x 4 = 4mks)

25 (a) Ways through which soil lose fertility;

* Soil erosion
* Soil capping
* Hardpans
* Leaching
* Monocropping
* Continuous cropping
* Change of soil PH
* Burning of land
* Accumulation of salts
* Infestation of weeds.

( award 2 x 6 = 12 mks for any well explained point)

(b) Factors considered in farm planning;

* Size of the farm
* Environmental factors
* The current trends in labour market
* Farmer’s objectives and preference.
* Possible production enterprize.
* Existing market conditions and price trends.
* Availability and cost of farm inputs.
* Communication and transport facilities.
* Security.

( 1 x 8 = 8 Mks for any correct 8 points).