# MARKING SCHEME

|  |  |  |  |
| --- | --- | --- | --- |
| **SECTION**  | **QUESTION**  | **MAXIMUM** **SCORE**  | **CANDIDATE** **SCORE**  |
| **A**  | **1-16**  | **30**  |  |
| **B**  | **17-20**  | **20**  |  |
| **C**  |  | **20**  |  |
|  |  | **20**  |  |
|  | **TOTAL SCORE**  | **90**  |  |

## SECTION A (30marks)

***Answer all questions in this section in the spaces provided***

1. List **four** reasons for early land preparation.

(2mks)

1. ***To allow time for weeds to dry.***
2. ***To allow time for exposed pests to die. iii. To allow time for subsequent operations.***

 ***iv. To allow time for compaction of soil.***

2. State **four** disadvantages of clean weeding in a maize field.

 (2mks)

1. ***Exposes soil to agents of erosion.***
2. ***Exposes soil to heat leading to loss of nutrients through vitalization. iii. Loses water through evaporation.***

 ***iv. Creates suitable conditions for weed seeds to germinate.***

3. State **four** factors that determine the choice of a method of irrigation used in a farm.

 (2mks)

***i. Availability of capital. ii. Topography of land***

***iii. Availability of water. iv. Type of soil.***

 ***v. Type of crop to be irrigated.***

4. Name **two** sources of credit for a group of farmers registered as a cooperative. (1mk)

1. ***Co-operative societies***
2. ***Crop boards***
3. ***Commercial banks iv. Agricultural finance cooperation.***
4. ***Settlement fund trusties.***
5. ***Insurance companies/ traders***

1. State **four** characteristics of well decomposed farm yard manure.

 (2mks)

* + 1. ***Free from bad odour.***
		2. ***Does not have original material or debrils. iii. Light in weight.***
	1. ***Dark brown in colour.***
	2. ***Crumby and not stickey.***

1. Name **two** types of labour records.

 (1mk)

* 1. ***Muster roll.***
	2. ***Labour utilization record.***

1. State **two** uses of a sales book.

 (1mk)

* 1. ***Records all details of produce sold from the farm on which payment has not been received.***
	2. ***Records all firms which owes money to the farm.***

1. Name **three** methods of training crops.

(1½mks)

* 1. ***Stalking***
	2. ***Propping iii. Trellising***

1. Name **three** diseases that affect tomatoes in the field.

 (1½mks)

* 1. ***Late blight***
	2. ***Early blight***
	3. ***Blossom end rot iv. Bacterial wilt***

1. State **four** reasons for resettlement and settlement in Kenya.

 (2mks)

* 1. ***To diversity agricultural production. ii. To check rural to urban migration.***

***iii. To ease population pressure iv. To reclaim arable land not in use.***

***v. To provide land to people affected by natural calamities.***

1. State **four** aspects of biological weed control.

(2mks)

* 1. ***Agent should be selective.***
	2. ***Should not affected poisoned by week to be controlled. iii. Should be economical to implement /mital.***

***iv. Should be easy t eradicate.***

1. State **four** symptoms of attack by the bean fly in bean production.

 (2mks)

* 1. ***Holes in stem/tunnels in stem. ii. Stem swells at the base.***

***iii. Cracking of stem at the base iv. Stunted growth.***

1. Give **three** reasons for flooding when growing paddy rice.

 (1½mks)

* 1. ***Weed control against non acquatie weeds***
	2. ***Control of crowing pests such as army worms iii. Maintain high humidity required for growth of rice. iv. Prevent denitrification.***

1. State **four** precautions observed when harvesting cotton.

 (2mks)

* + 1. ***Should be done during dry conditions***
		2. ***Gunny / sisal bags should not be used. iii. Twigs/stems leaves should not be picked with lint.***

***iv. Separate containers should be used to faut at white lint (safi) and stan(Fiti).***

1. (a) State **two** disadvantages of tractor hire services.

 (2mks)

* + 1. ***Not available when needed***
		2. ***Some farmers may be overcharged.***

 (b) Give **four** sources of tractor hire services.

 (2mks)

1. ***Government tractor hire services***
2. ***Private contractors. iii. Individual farmers***

 ***iv. Cooperative societies with tractors***

1. State **four** functions of the National Agricultural Commodity Association.

 (2mks)

* 1. ***Bargain for better prices for farm produce.***
	2. ***Ensure timely and adequate supply of farm imputs.***
	3. ***Bargain for reasonable and affordable prices of farm imputs.***

1. (a) What is meant by the term Agroforestry?

(½mk)

* 1. ***A variety of land use practices that combine tree growing, pasture and crop production practices.***

 (b) State **four** management practices carried out during intensive hedgerow agroforestry. (2mks) ***i. Pruning***

1. ***Weeding***
2. ***Pest control iv. Disease control***

 ***v. protection***

**SECTION B (20marks)**

 **Attempt all questions in this section**

1. Identify the following methods of propagation. (1½marks)

C

U

 S ***Side grafting*** T ***Budding*** V ***stem cutting***

* 1. State **three** factors contribute to the success of method S?

 (1½mk)

* 1. ***Scion and root stock should be compatible.***
	2. ***Should be free from moisture.***
	3. ***Should be free from air.***

* 1. Name parts labelled B and C. (1mk)
	2. ***Scion***
	3. ***Root stock.***

* 1. State **two** importance of part U in the diagram labelled T?

 (1mk)

* 1. ***Provides / develops to form a shoot.***
	2. ***Diseased or damaged part of plant can be repaired.***
	3. ***Used to establish several compatible species on one root stock.***

d)Name **two** crops propagated by use of method V.

 (1mk)

* + 1. ***Citrus fruits***
		2. ***Mango***
1. Maina’s farm requires the following items on credit from Kenya farmers association on 30th March 2020

 10bags of Unga feeds Bran

 18bags of DSP Chapa meli

 24kg of Rose Coco Bean seeds simlaw seed

KFA sells the items as follows

|  |  |  |  |
| --- | --- | --- | --- |
| Item  | Company  | Price  | Quantity in store  |
| Bran 90kgs/bag  | Brookhouse farm supplies |  Kshs. 1000/bag  | 200 bags  |
| Bran 90kgs/bag  | Unga feeds Bran  | Kshs. 1200/bag  | 150 bags  |
| Bran 90kgs/bag  | EA MAIZE Millers  | Kshs. 1230/bag  | 400 bags  |
| DSP 50kgs each  | Chapa meli  | Kshs. 1500/bag  | 120 bags  |
| DSP 50kgs each  | Nauru international  | Kshs, 1500/bag  | 140 bags  |
| DSP 50kgs each  | Boatmil industries  | Kshs. 1500/bag  | 150 bags  |
| Bean seeds Rose coco  | Kenya Seed  | Ksh330 / 2kgs packets  | 100 - 2kgs packets  |
| Bean seeds Rose coco  | Western Seed  | Ksh290 / 2kgs packets  | 400 - 2kgs packets  |
| Bean seeds Rose coco  | Simlaw Seed  | Ksh300 /2kgs packets  | 120 - 2kgs packets  |

* 1. Prepare a purchase order that KFA made to Maina’s farm.

 (3mks)

***PURCHASE ORDER MAINA’S FARM P.O BOX……….***

### NAIROBI

 ***TO: KENYA FARMERS DATE: 30/03/2020***

***ASSOCIATION***

***Please supply the following.***

|  |  |  |
| --- | --- | --- |
| ***Item No***  | ***Particulars***  | ***Quantity***  |
| ***2***  | ***Bran Unga feeds***  | ***10 bags***  |
| ***4***  | ***D.S.P – chapa meli***  | ***18 bags***  |
| ***9***  | ***Rose coco Bean seeds (simlaw)***  | ***24 kg***  |

***Ordered by:……………………………………………….***

***Authourised by:………………………………………..***

20. Below is an illustration of a method of frame formation in tea. Answer the questions that follow.

 

 a) Identify the above method.

 (1mk)

***i. Pegging method using individual hooked pegs.***

b) Describe the procedure followed in (a) above

 (4mks)

1. ***A young tea plant is allowed to grow for one year ro reach a height of 25 – 30cm.***
2. ***Cutting back is done to 15cm above the ground. iii. Slide branches are allowed to grow to 60 – 75 cm. iv. Hooked pegs are used to force plant to grow at an angle of 300 + 450.***

***v. The tips are nipped off.***

c) Apart from the above method name one other method of frame formation (1mk) ***i. Formative pruning.***

21. Give a reason why the following practises are important when making silage

 a) Wilting crop for 6-12 hours

 (1mk)

***i. To reduce the moisture content which lowers the silo lensiling temperature. ii. Improve the guilty of collage***

***iii. Reduce produce effluent.***

1. Compacting the ensiled materials every 10cm-12cm

 (1mk)

* + 1. ***To raise the ensiling temperature.***
		2. ***To remove air that causes butyric fermentation***.

1. Checking the temperature regularly

 (1mk)

* 1. ***To prevent high or low temperature that leads to poor decomposition.***
	2. ***Avoid gaseous losses.***

1. Ensuring that the soil over the silo maintains a hump shape after covering

 (1mk)

***To allow rain water to drain off the silo.***

## SECTION C (40 marks)

*Answer any* ***two*** *questions from this section in the spaces provided after question 22.*

22. A farmer in Rongai division wishes to change from arable farming to dairy goat production. In arable farming he has been spending kshs.400 on weeding maize and Ksh 200 on weeding cabbages. He spends Ksh 500 and Ksh 300 on harvesting maize and cabbages respectively. He buys the following inputs; DAP fertilizer at Ksh.1000, cabbage seeds for Ksh 400, maize seeds for Ksh 600. Pesticides cost ksh800. He also spends Ksh. 300 on shelling of maize.

The change in enterprise will have the following implications; He will buy 5 dairy goats at ksh.2, 000 each; pay milk man ksh.3, 000; control diseases at a cost of ksh.1500. Fencing of the farm will be done at a cost of ksh.1, 500.The revenue he gets when growing maize is ksh.10, 000 and cabbages is ksh.4, 000. In dairy goat production, he will get Ksh 20,000 from sale of milk and Ksh 1000 from sale of manure.

***a)*** Prepare a partial budget and advise the farmer whether the change is worthwhile or not.(12mks)

### Partial Budget for Rongai farm

 ***31st Dec 2020***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***Debit***  |  |  | ***Credit***  |  |  |
| ***Extra cost Dairy goats***  | ***Ksh***  | ***Cts***  | ***Extra Revenue Dairy goats***  | ***Ksh***  | ***Cts***  |
| ***5 dairy goats***  | ***10,000***  | ***00***  | ***Sale of milk***  | ***20,000***  | ***00***  |
| ***Labour***  | ***3,000***  | ***00***  | ***Sale of*** ***manure***  | ***1,000***  | ***00***  |
| ***Treatment***  | ***1,500***  | ***00***  |  |  |  |
| ***Fencing***  | ***1,500***  | ***00***  |  |  |  |
| ***Total***  | ***16,000***  | ***00***  | ***Total***  | ***21,000***  | ***00***  |
| ***Revenue forgone***  |  |  | ***Cost saved***  |  |  |
| ***Sale of maize***  | ***10,000***  | ***00***  | ***Weeding maize and cabbage***  | ***600***  | ***00***  |
| ***Sale of cabbages***  | ***4,000***  | ***00***  | ***Harvesting maize and cabbage***  | ***800***  | ***00***  |
| ***Total***  | ***14,000***  | ***00***  | ***D.A.P fertilizer***  | ***1,000***  | ***00***  |
|  |  |  | ***Pesticide***  | ***800***  | ***00***  |
|  |  |  | ***Shelling maize***  | ***300***  | ***00***  |
|  |  |  | ***Total***  | ***4,500***  | ***00***  |
| ***Total Debit***  | ***30,000***  | ***00***  | ***Total credit***  | ***25,500***  | ***00***  |

***(Extra revenue + cost saved) = (Extra cost + revenue forgone)***

***Credit Debit***

***25,500 – 30,000 = 4500***

***It is not worthwhile to change from arable farming to goat farming.***

b) Explain **four** factors that determine the choice of a farming enterprise (8 mks)

1. ***Size of farm – large farm can hold many enterprises while a small farm holds few enterprises.***
2. ***Environmental factors – include climate, type of soil and topography which determine type of plants to grow***
3. ***Farmers choice and preference – has a psychological effect encouraging production of certain enterprises.***
4. ***Current trends in labour market.***

23 a) Explain **five** roles of Agricultural based women self-help groups in Kenya. (5 mks)

1. ***Loaning members to finance their projects***
2. ***Enlighten members on new methods of farming and improve technology. iii. Assist in marketing agricultural produce. iv. Buy farm inputs in bulk.***

***v. Collectively assist members in farming tastes. vi. Guarantee members for loans***

***vii. Gather information in intense projects. viii. Acts as agents of community change.***

 b) The inventory of Awilo’s Farm as at 31st December 2020 was as follows In Ksh:

 Cash in hand 5,000

 Layers 27,000

 Dairy cattle 125,000

 Maize in store 6,000

 Calves 29,000 Buildings 70,000

 Land 200,000

 Machinery 75,000

On the same day, the following information was obtained from the sales record.

 Bank loan 160,000

 Egg sale on credit 20,000 Milk sales on credit 25,000 Vegetable sales on credit 10,000 Fertilizer purchased on credit 15,000

 Wages payable 8,200

 Taxes payable 8000

 Interest payable on loan 4,000

 (a) Prepare a balance sheet

 (8mks)

***Balance sheet for Awilos farm***

### As at 31st December 2020-12-07

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***Liabilities***  | ***Ksh***  | ***Cts***  | ***Assets***  | ***Ksh***  | ***Cts***  |
| ***Bank loan***  | ***160,000***  | ***00***  | ***Cash in hand***  | ***5,000***  | ***00***  |
| ***Fertilizer purchased on credit***  | ***15,000***  | ***00***  | ***Layers***  | ***27,000***  | ***00***  |
| ***Wages payable***  | ***8,200***  | ***00***  | ***Dairy cattle***  | ***125,000***  | ***00***  |
| ***Taxes payable***  | ***9,000***  | ***00***  | ***Maize in store***  | ***6,000***  | ***00***  |
| ***Interest on loan***  | ***4,000***  | ***00***  | ***Calves***  | ***29,000***  | ***00***  |
| ***Total liabilities***  | ***195,000***  | ***00***  | ***Buildings***  | ***70,000***  | ***00***  |
|  |  |  | ***Land***  | ***200,000***  | ***00***  |
|  |  |  | ***Machinery***  | ***75,000***  | ***00***  |
|  |  |  | ***Eggs sold on credit***  | ***20,000***  | ***00***  |
| ***Capital***  | ***371,800***  | ***00***  | ***Vegetables sold on credit***  | ***10,000***  | ***00***  |
| ***Total balance***  | ***576,000***  | ***00***  | ***Total assets***  | ***576,000***  | ***00***  |

 (b) State with a reason if Awilo’s farm solvent or insolvent (1mk)

***i. Awilo’s farm is solvent because the assets total to 567,000 against the liabilities 195,200 hence a capital of 371,600***

c) State five ways through which agricultural practices pollute water bodies.

 (5mks)

25. The tables below show the weekly demand and supply for wheat.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Price (Ksh.)  | Quantity demand (kg)  |   | Price (Ksh.)  | Quantity supplied (kg)  |
| 200  | 250  |        | 200  | 2500  |
| 180  | 350  | 180  | 2250  |
| 160  | 550  | 160  | 2000  |
| 140  | 900  | 140  | 1700  |
| 120  | 1300  | 120  | 1300  |
| 100  | 1850  | 100  | 800  |
| 80  | 2500  | 80  | 100  |

 a. (i) Draw a demand and supply curve on the graph attached (7

mks)



1. Determine the equilibrium price for the wheat (1mk)

***120ksh***

1. Calculate the elasticity of demand for



1. (i) If the price increased from kshs.140 to kshs.160 (2mks)



 (ii) Find the quantity demanded at equilibrium price.

 (2mks)

***1300kg***

1. Explain **two** factors that affect the demand of tomatoes other than price.

 (2mks)

1. ***Income***
2. ***Population***
3. ***Preferences and force iv. Prices of related goods***
4. ***Advertisement***
5. ***Beliefs and customs***

b) Describe four characteristics of variable inputs (4mks)

i. ***Change in quantity required with level of production ii. Added to fixed inputs for production iii. Allocated to specific resources iv. Used to calculate gross margin***