

KAPSABET HIGH SCHOOL

443/1 - AGRICULTURE - Paper 1

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)

- i. To allow time for weeds to dry.*
- ii. 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)

- i. Exposes soil to agents of erosion.*
- ii. 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)

- i. Co-operative societies*
- ii. Crop boards*
- iii. Commercial banks iv. Agricultural finance cooperation.*
- v. Settlement fund trusties.*
- vi. Insurance companies/ traders*

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

(2mks)

- i. Free from bad odour.*
- ii. Does not have original material or debris. iii. Light in weight.*
- iv. Dark brown in colour.*
- v. Crumby and not stickey.*

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

(1mk)

- i. Muster roll.*
ii. Labour utilization record.
7. State **two** uses of a sales book.
(1mk)
- i. Records all details of produce sold from the farm on which payment has not been received.*
ii. Records all firms which owes money to the farm.
8. Name **three** methods of training crops.
(1½mks)
- i. Stalking*
ii. Propping *iii.*
Trellising
9. Name **three** diseases that affect tomatoes in the field.
(1½mks)
- i. Late blight*
ii. Early blight
iii. Blossom end rot *iv.*
Bacterial wilt
10. State **four** reasons for resettlement and settlement in Kenya.
(2mks)
- i. 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.
11. State **four** aspects of biological weed control.
(2mks)
- i. Agent should be selective.*
ii. Should not affected poisoned by week to be
controlled. *iii. Should be economical to implement /mital.*
iv. Should be easy t eradicate.
12. State **four** symptoms of attack by the bean fly in bean production.
(2mks)
- i. Holes in stem/tunnels in stem.* *ii.*
Stem swells at the base.
iii. Cracking of stem at the base *iv.*
Stunted growth.

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

(1½mks)

i. Weed control against non aquatic weeds

ii. Control of crowing pests such as army worms iii.

Maintain high humidity required for growth of rice. iv.

Prevent denitrification.

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

(2mks)

i. Should be done during dry conditions

ii. 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).

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

(2mks)

i. Not available when needed

ii. Some farmers may be overcharged.

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

(2mks)

i. Government tractor hire services

ii. Private contractors. iii.

Individual farmers

iv. Cooperative societies with tractors

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

(2mks)

i. Bargain for better prices for farm produce.

ii. Ensure timely and adequate supply of farm imputs.

iii. Bargain for reasonable and affordable prices of farm imputs.

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

(½mk)

i. 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)

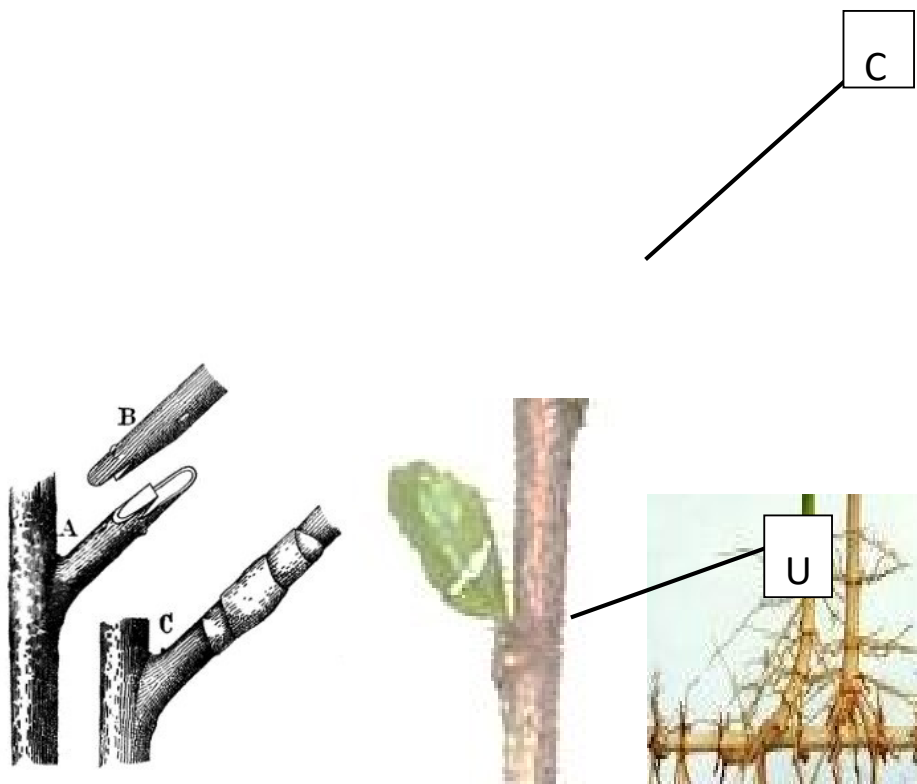
i. Pruning

- ii. Weeding
- iii. Pest control iv.
Disease control
- v. protection

SECTION B (20marks)

Attempt all questions in this section

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



S Side grafting T Budding V stem cutting

a) State **three** factors contribute to the success of method S?

(1½mk)

- i. Scion and root stock should be compatible.*
- ii. Should be free from moisture.*
- iii. Should be free from air.*

b) Name parts labelled B and C.

(1mk)

B Scion

C Root stock.

c) State **two** importance of part U in the diagram labelled T?

(1mk)

- i. Provides / develops to form a shoot.*
- ii. Diseased or damaged part of plant can be repaired.*
- iii. Used to establish several compatible species on one root stock.*

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

(1mk)

- i. Citrus fruits*
- ii. Mango*

19. 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

a) Prepare a purchase order that KFA made to Maina's farm.

(3mks)

**PURCHASE ORDER
MAINA'S FARM
P.O BOX.....
NAIROBI**

**TO: KENYA FARMERS
ASSOCIATION**

DATE: 30/03/2020

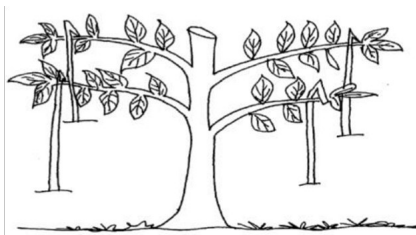
Please supply the following.

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

Ordered by:.....

Authorised 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)

- i. A young tea plant is allowed to grow for one year to reach a height of 25 – 30cm.***
- ii. 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 30° + 45°.***
- 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 ensiling temperature. ii.

Improve the quality of collage

iii. Reduce produce effluent.

b) Compacting the ensiled materials every 10cm-12cm

(1mk)

i. To raise the ensiling temperature.

ii. To remove air that causes butyric fermentation.

c) Checking the temperature regularly

(1mk)

i. To prevent high or low temperature that leads to poor decomposition.

ii. Avoid gaseous losses.

d) 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	Ksh	Cts	Extra Revenue	Ksh	Cts
Dairy goats			Dairy goats		
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)

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

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

- i. Loaning members to finance their projects***
- ii. 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

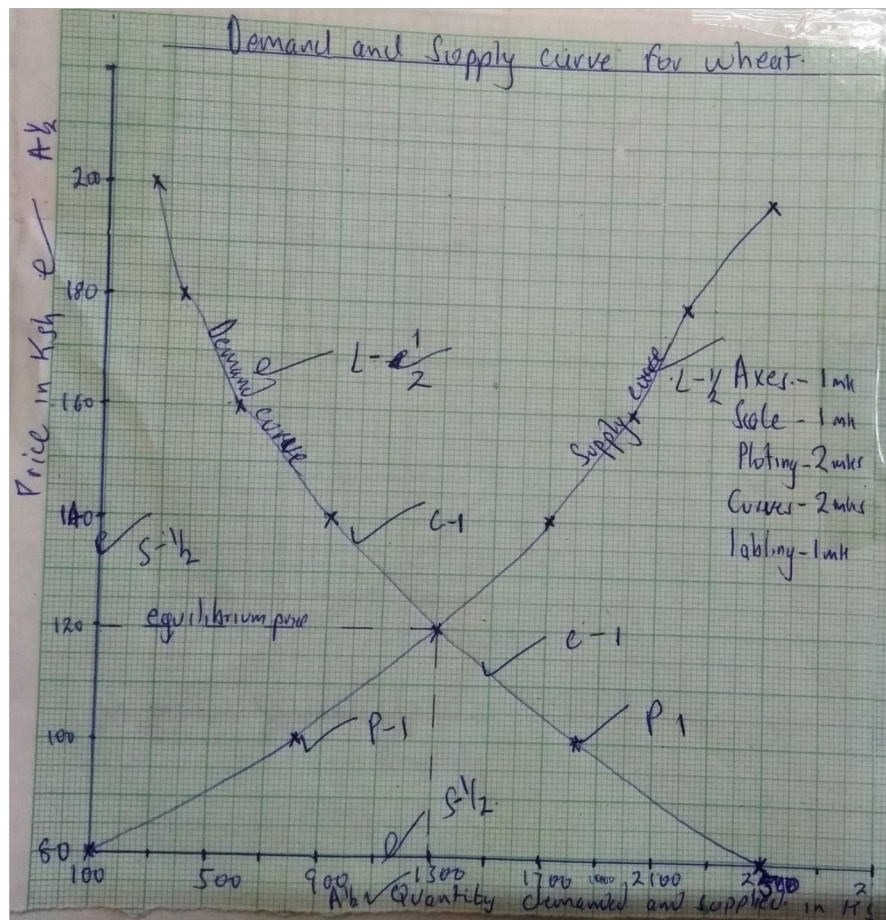
c) State five ways through which agricultural practices pollute water bodies. (5mks)

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

Price (Ksh.)	Quantity demand (kg)
200	250
180	350
160	550
140	900
120	1300
100	1850
80	2500

Price (Ksh.)	Quantity supplied (kg)
200	2500
180	2250
160	2000
140	1700
120	1300
100	800
80	100

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



- (ii) Determine the equilibrium price for the wheat

(1mk)

120ksh

- (iii) Calculate the elasticity of demand for

(iii) Calculate the elasticity of demand for
 (a) Price fall from 200 - 180

$$E_{cd} = \% \frac{\Delta Q}{\Delta P} = \frac{\frac{\Delta Q}{Q} \times 100}{\frac{\Delta P}{P} \times 100} = \frac{\frac{250-350}{350} \times 100}{\frac{200-180}{180} \times 100} = \frac{-28.57}{11.11} = 2.57$$

b. (i) If the price increased from kshs.140 to kshs.160

(2mks)

(b) If the price increased from Kshs. 140 to 160

$$E_d = \frac{\% \Delta Q}{\% \Delta P} = \frac{\frac{\Delta Q}{Q} \times 100}{\frac{\Delta P}{P} \times 100} = \frac{\frac{900 - 550}{550} \times 100}{\frac{140 - 160}{160} \times 100} = \frac{63.63}{12.5} = 5.09$$

(ii) Find the quantity demanded at equilibrium price.

(2mks)

1300kg

c. Explain **two** factors that affect the demand of tomatoes other than price. (2mks)

i. Income

ii. Population

iii. Preferences and force iv.

Prices of related goods

v. Advertisement

vi. 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