

NAME \_\_\_\_\_  
SCHOOL \_\_\_\_\_

INDEX NO. \_\_\_\_\_  
SIGNATURE \_\_\_\_\_  
DATE \_\_\_\_\_

443/2

AGRICULTURE

PAPER 2

TIME: 2 HOURS

# Revision Kits 2024

# FOCUS A365

Another Manyamfranchise.Com Evaluation Test

## Kenya Certificate of Secondary Education (K.C.S.E)

### INSTRUCTIONS TO CANDIDATES

- Write your name, school and index number in the spaces provided above.
- Sign and write the date of the examination in the spaces provided above.
- This paper consists of three sections: A, B and C.
- Answer **all** the questions in section **A** and **B** and **any two** questions from section **C**.
- All answers must be written in the spaces provided in this booklet.
- This paper consists of **12** printed pages.
- Candidates should check the question paper to ascertain that all pages are printed as indicated and that no questions are missing.

### FOR OFFICIAL USE ONLY

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE
A	1 – 18	30	
B	19 – 22	20	
C	23	20	
	24	20	
	25	20	
TOTAL SCORE		90	

Turn Over

**SECTION A (30 MARKS)**

*Answer ALL the questions in this section in the spaces provided.*

1. State **two** problems associated with tractor hire services that farmers encounter. (1 mark)

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2. Name the tool used for tightening wire during fencing. (½ marks)

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3. Name **two** cattle diseases controlled by administering one vaccine. (1 mark)

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4. State **four** qualities of clean milk. (2 marks)

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5. State **four** factors that are considered when formulating a livestock ration. (2 marks)

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6. Name **four** dual purpose breeds of dairy cattle. (2 marks)

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7. a) Define the term feed additives. (½ mark)

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- b) State **three** importance of feed additive. (1½ marks)

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8. State **four** functions of the worker bee in a bee colony. (2 marks)

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9. Give **four** routine management practices that should be carried out on a lactating ewe. (2 marks)

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10. State **two** functions of crop in poultry digestive system. (1 mark)

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11. a) Give **three** methods of controlling cannibalism in a flock of layers in deep litter system. (1½ marks)

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b) Why are the following conditions maintained during artificial incubation of eggs in poultry production?

i) Proper ventilation (1 mark)

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ii) Relative humidity at 60% (1 mark)

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12. Distinguish between mothering ability and prolificacy as used in livestock breeding. (1 mark)

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13. List **four** principles of controlling endoparasites. (2 marks)

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14. State the importance of the following requirements in fish farming.

a) Gentle slope (½ mark)

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b) Clay soil (½ mark)

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15. State any **four** disadvantages that may arise from inbreeding in livestock production. (2 marks)

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16. State **four** reasons for culling a breeding boar. (2 marks)

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17. State **two** causes of soft egg shell (1 mark)

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18. Outline any **four** ways which farmers can use to control mastitis in a herd of dairy animals. (2 marks)

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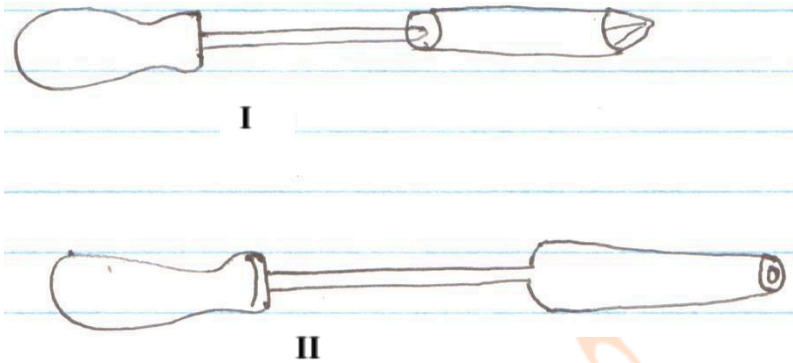
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*Atika Schooling Team*

**SECTION B (20 MARKS)**

*Answer ALL questions in this section in the spaces provided.*

19. The diagrams I and II show a set of farm tools.



a) Identify the tools. (2 marks)

I \_\_\_\_\_

II \_\_\_\_\_

b) State the functional difference between I and II. (2 marks)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

c) State **one** maintenance practice carried out on tool II. (1 mark)

\_\_\_\_\_

\_\_\_\_\_

20. a) A dairy farmer prepared 1000kg of feed (20% DCP) from the following feedstuffs:

i) Oats – 10% DCP

ii) Simsim seedcake 60% DCP

Calculate the amount of each feedstuff used using Pearson's square method. (3 marks)

b) Classify the following feedstuffs as either roughage or concentrate.

(2 marks)

i) Bone meal

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ii) Silage

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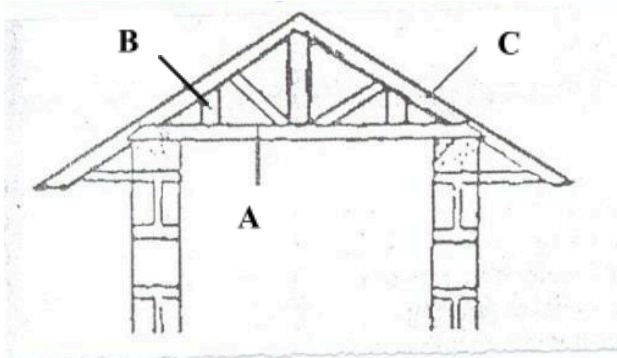
iii) Molasses

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iv) Bran

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21. Study the diagram below of a farm structure and answer the questions that follow.



a) Identify the parts labelled A, B, and C.

(3 marks)

A

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B

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C

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b) Name **two** chemical preservatives that can be used to treat the wooden part of the above structure against fungi and insect attack.

(2 marks)

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c) Give the ratio of cement, sand and ballast used when constructing the foundation.

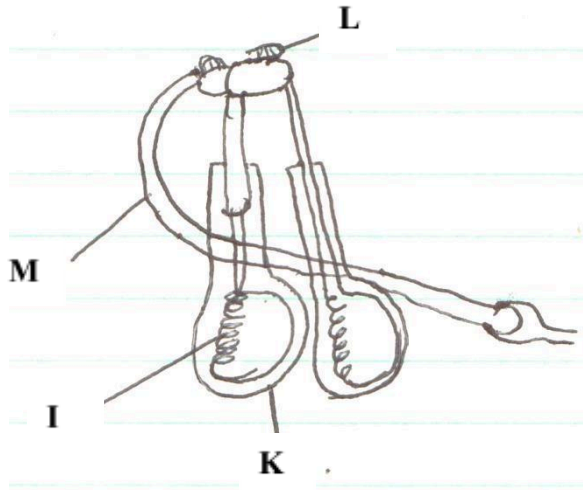
(1 mark)

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22. Carefully study the reproductive system of farm animal illustrate below then answer the question that follow.



- i) Identify the reproductive system. (1 mark)

- ii) State the functions of the parts labelled I, K and M. (3 marks)

I

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K

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M

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### **SECTION C** (40 MARKS)

*Answer any TWO questions from this section in the spaces provided.*

23. a) Describe the factors to consider when selecting livestock for breeding. (10 marks)  
 b) Describe ten signs of ill health in livestock. (10 marks)
24. a) Give ten differences between diesel and petrol engine. (10 marks)  
 b) Discuss anthrax disease under the following subheading.  
 i) Casual organism. (1 mark)  
 ii) Symptoms. (6 marks)  
 iii) Control measures. (3 marks)
25. a) Describe the reasons why bees may abscond from a beehive. (10 marks)  
 b) Describe the factors considered in siting farm structures on the farm. (10 marks)

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# MARKING SCHEME

443/2

**AGRICULTURE**

**PAPER 2**

**MARKING SCHEME**

**1. Problems associated with tractor hire service**

- Not readily available leading to late land preparation
- Poor quality work unless strict supervision
- Some farmers may be overcharged especially by private and individual farmers

Any (2x<sup>1/2</sup> = 1mk)

**2. Tool for tightening wire**

- Wire strainer/ monkey strainer (1/2mk)

**3. Cattle diseases controlled by administering one vaccine**

- i) Anthrax
- ii) Black quarter

(2x<sup>1/2</sup> = 1mk)

**4. Qualities of clean milk**

- Free from diseases causing organism
- Free from dirt/ foreign materials
- Appropriate smell and flavour
- Chemical composition is within the expected standard
- Is of high keeping quality

Any (4x<sup>1/2</sup> = 2mks)

**5. Factors considered when formulating a livestock ration**

- Body weight / size
- Age of the animal
- Level of production of the animal
- Animals activities
- Available feeds
- Nutrient composition
- Cost of feeds

(4x<sup>1/2</sup> = 2mks)

6.

- Sahiwal
- Redpoll
- Shorthorn
- Simmental
- Brown swiss

Any (4x<sup>1/2</sup> = 2mks)

7.

- Feed additive are special substances added to livestock feed (1/2 mk)
- Importance of feed additive
- Stimulate growth of livestock

- Improve feed conversion efficiency
  - Protect livestock against diseases to parasites
- 3 x 1/2 = (1 1/2 mks)

**8. Functions of the worker bee in a bee colony**

- Feed the queen, drone and brood
- Protect the hive from intruder
- Collect nectar, pollen, resins, gums and water
- Build combs and seal the cracks and crevice in the hive
- Clean the hive
- Make honey and bee wax.

Any (4x<sup>1/2</sup> = 2mks)

**9. Routine management practices on a lactating ewe**

- Proper feeding
- Controlling internal parasite
- Controlling external parasites
- Vaccination
- Hoof trimming
- Treatment incase of infection
- Provision of adequate clean water

Any (4 x 1/2 = 2mks)

**10. Functions of crop in poultry digestive system**

- Stores food temporarily
  - Moisten food with water
- (2x<sup>1/2</sup> = 1mk)

11.

**a) Methods of controlling cannibalism in a flock of layer in deep litter system**

- Make Laying Boxes/ Nest Dark
  - Provide Adequate Floor Space For Birds
  - Feed Birds On Adequate Balanced Diet
  - Control External Parasite
  - Hang Green Leaves To Keep Birds Busy
  - Debeak Nerpetual Cannibals
  - Cull Perpetual Cannibals
  - Isolate And Treat Injured Birds
  - Avoid Bright Light In The House
  - Keep Birds According To Their Age Groups
- Any (3x<sup>1/2</sup> = 1 1/2 mks)

**b) Why the following conditions should be maintained during artificial incubation of eggs.**

i)

- Discourage the accumulation of carbon (iv) oxide in the eggs that would lead to the death of embryos.
- Helps to control humidity (1x1=1mk)

ii)

- At low humidity the embryos may lose moisture and die

High humidity lowers hatchability and leads to production of bigger chicks which look marshy  
any 1x1=(1mk)

12. **Mothering ability is the ability to take care of the young ones while prolificacy is the ability to give birth to more than one young one (production of many offsprings e.g. in pigs in one parturition.**

1 x 1 = 1 mk

13. **Principles of controlling endoparasites**

- The flock and its environment
- Nutritional status of the stock
- Pasture management and rational grazing
- Housing management
- Protecting of the young
- Prediction of an outbreak.

(4x $\frac{1}{2}$ =2mks)

14. **Importance of the following requirements in fish farming**

- a) Gentle slope  
To allow free flow of water ( $\frac{1}{2}$ mk)
- b) Clay soil  
To prevent seepage/ to hold water for long  
( $\frac{1}{2}$ mk)

15. **Disadvantages of inbreeding**

- Loss of hybrid vigour
- Decline in fertility leading to species extinction
- Reduced field / reduction in programme
- Leads to high rate of pre-natal mortality

4x $\frac{1}{2}$ =2mks)

16.

- Infection with chronic diseases
- Serious physical injury
- Old age
- Low libido
- Over weight
- Control inbreeding
- Undesirable characteristics

4x $\frac{1}{2}$ =2mks)

17.

- Low level of calcium in the feed
- New castle disease attack  
(2x $\frac{1}{2}$ = 1mk)

18. **Ways of controlling mastitis in a herd dairy animals**

- Complete milking

- Using proper milking techniques
- Administer dry cow therapy
- Milk affected animal last
- Observe proper hygiene in animal house.  
Any (4x $\frac{1}{2}$ = 2mks)

### SECTION B (20MKS)

19.

- a) **I-** (Non electric) soldering gun (1mk)  
**II-** Dehorning iron (1mk)
- b) **Functional differences between I or II**

I	II
Used to join pieces of metal using an alloy which has a lower melting point than metal being joined	Used to remove the horn bud Resulting to a lifelong polled animal.

(2mks)

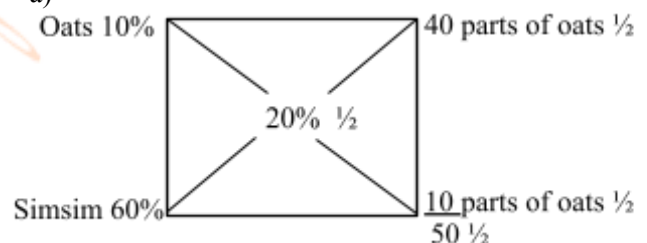
- c) **Maintenance practices on toll II**

- Sterilizing before and after using
- Applying anti-rust on metallic part during long storage
- Repairing / replacing wornout handle

Any (1x1=1mk)

20.

a)



Amount of oats =  $\frac{40}{50} \times 1000\text{kg}$   
= 800kg of oats  $\frac{1}{2}$

Amount of simsim =  $\frac{10}{50} \times 1000\text{kg}$   
= 200kg of simsim  $\frac{1}{2}$ mk

- b) **Classifying feedstuffs as either roughage or concentrate**

- i) Concentrate ( $\frac{1}{2}$ mk)  
ii) Roughage ( $\frac{1}{2}$ mk)  
iii) Concentrate ( $\frac{1}{2}$ mk)  
iv) Concentrate ( $\frac{1}{2}$ mk)

21.

- a) **Parts labelled as A, B, and C**

A- Cross tie  
B- Strut  
C- Rafter

(3x1=3mks)

b)

- old engine oil

- copper sulphate
- sodium dichromate
- arsenic pentoxide
- pentachlorophenol
- tributyl tin oxide                      *Any*              (2x1=2mks)

c) **Ratio of cement sand and ballast**

1:2:4                      (1mk)

22.

- i) Male reproductive system/ bull reproductive system                      (1mk)

ii) **Functions of the parts**

I -Epididymis – for temporary storage of sperms

K -Scrotum – protects tests from mechanical injury regulates temperature of the testes.

M -Urethra – passage of urine  
– Passage of semen to the outside  
(3x1=3mks)

**SECTION C              (40MKS)**

23.

a) **Factors to consider when selecting livestock's for breeding**

- Body Conformation
- Reproductive Life
- Age Of The Animal
- Breeding Ability
- Adaptability Of The Breed

- Mothering Ability In Case Of Female
- Production Potential/ Ability
- Growth Rate
- Disease Resistance
- Abnormalities / Deformities
- Temperament / Behaviour
- Offspring Performance

*Stating* ½ mk

*Explanation* ½ mk              (10mks)

**b) Signs of ill-health in livestock**

- Loss of appetite
  - Abnormal heartbeat
  - Difficulty breathing
  - Dull in appearance
  - Isolates from others
  - Straining /limping when walking/lameness
  - High /low body temperature
  - Abnormal consistency of dung/ diarrhea/ constipation
  - Presence of wounds
  - Bloody urine
  - Sudden drop in milk production
  - Starring coat
  - Emaciation
  - Inflamed mucus membrane/ paleness
- 10x1=10 mks

24.

a) **Difference between diesel and petrol engine**

Diesel engine	Petrol engine
<ul style="list-style-type: none"> <li>- uses diesel as fuel</li> <li>- has an injector pump</li> <li>- has no spark plug</li> <li>- fuel ignite by compression</li> <li>- air and fuel first meet in the cylinder before compression</li> <li>- fuel consumption is low</li> <li>- has a high air-fuel compression ration thus more efficient</li> <li>- Air is taken in during induction stroke thus the ratio of air/ fuel is not constant.</li> <li>- Has a sediment bowl</li> <li>- Operation costs are lower due to low specific fuel consumption.</li> <li>- Relatively heavy in weight and suited to heavy duty machinery.</li> <li>- Produces a lot of smoke.</li> </ul>	<ul style="list-style-type: none"> <li>- uses petrol as fuel</li> <li>- has a carburetor</li> <li>- has a spark plug</li> <li>- fuel ignite by an electric spark</li> <li>- air and fuel first meet in the carburetor before comprehension</li> <li>- fuel consumption is high</li> <li>- Has a low air-full compression ratio thus less efficient.</li> <li>- No extra addition of air/ fuel thus ratio is constant(15:1)</li> <li>- Has no sediment bowl</li> <li>- Operation costs are higher due to its high specific fuel consumption.</li> <li>- Relatively light in weight and suited to light duty machinery.</li> <li>- Produces less smoke.</li> </ul>

10x1=10marks

**b) i) Casual organism**

- A bacterium known as *Bacillus anthracis*.

(1mark)

**ii) Symptoms**

- Carcass lacks rigor mortis.
- Tar-like watery blood oozes through all natural openings like nose, anus and mouth.
- Blood does not clot quickly.
- Blood-stained faeces and milk.
- Extensive blotting of stomach after death.
- High fever.
- Swelling of the throat which may cause death due to suffocation in pigs.
- Swelling of the underside of the body.

6x1=6marks

**iii) Control measures**

- Vaccination using Blanthrax
- Imposing quarantine incase of outbreak.
- Proper disposal of carcass-burn or burry 2M deep.

3x1=3marks

25.

**a) Reasons why bees abscond from the beehive.**

- Shortage of water and food in their surroundings.
- Outbreak of diseases in the colony.
- Damage of the brood combs.
- Dampness in the hive.
- Bad smell in the environment.
- Sick queen
- Infertile queen.
- Lack of adequate ventilation.
- Overcrowding.
- Attack by parasites.

10x1=10marks

**b) Factors considered in siting farm structures on the farm.**

- Location of the homestead.
  - Site where it could be possible to have a good view of the farm.
- Security of the structure.
  - Structure should be safe from predators, thieves and trespassers.
- Drainage of the site.
  - Site should have a good drainage to prevent structures from being destroyed by water.
  - Damp conditions encourage disease infection.
- Direction of the prevailing wind.
  - Pigsty and latrines should be constructed on the leeward side of the homestead because they produce foul smells.
- Accessibility
  - Structures should be easy to reach from most parts of the farm.
- Relationship between the structures.
  - Structures with related uses should be constructed close to each other to save on time and labor.
- Topography of the area.
  - Some structures require a relatively level site.
- Proximity of amenities.
  - Electricity, water supply etc, should be considered.
- Farmer's taste and prevalence.
  - Some farmers may prefer to have the homestead in a sheltered place while others may not.
- Government policy.
  - The government policy while siting some structures should be considered, e.g siting structures near river banks.

Stating ½ mark

Explanation ½ mark

Total 10marks