CEKENAS END OF TERM ONE EXAM-2022
FORM FOUR
Kenya Certificate of Secondary Education. (K.C.S.E)
AGRICULTURE
PAPER 2
MARKING SCHEME

SECTION A (30MARKS)
ANSWER ALL QUESTIONS IN THIS SECTION

1. **Name the breed of goat kept for hair production** **(1mk)**
Angora (1x1=1mk)

2. **State two ways in which barbed wire fence may be reinforced in the farm**
(1mk)
- Use of droppers
- Use of concrete to fix post
- Use of struts and braces ½ x 2 = 1mk

3. **Broadly classify two causes of infertility in a herd of cattle** **(1mk)**
- Faulty/failure of the reproductive mechanism
- Poor feeding
- Breeding diseases ½ x 2 = 1mk

4. Name the tool that is used together with the following as a pair (1mk)
a) **Hypodermic needle** - Syringe
   b) **Elastrator** - Rubbering/ Rubber band ½ x 2 = 1mk

5. **Name four signs of anthrax observed in carcass of cattle** **(2mks)**
- Lack of rigor mortis
- Dark red blood oozing out through all natural openings/ orifices
- Non-clotting blood
- Bloated/swollen stomach ½ x 4 = 2mks

6. **Name four ways by which cannibalism in poultry could be avoided** **(2mks)**
- Debeaking perpetual cannibals
- Use of battery cage system
- Laying box being as dark as possible
- Dim light

½ x 4 = 2mks

7. **Name the intermediate host of the following parasites** **(1mk)**
   a) **Tapeworm** Pig; cattle
   b) **Liver fluke** mud-snail/water snail

8. a) **List down two groups of cattle that are susceptible to milk fever   (1mk)**
    -   Heavy milking cows/high yielding cows
    -   Animal feeds or feeds lacking calcium
    -   Cows at $3^{rd} - 4^{th}$ lactation
    -   Cows which had past cases of milk fever

                                                                ½ x 2 = 1mk)

    b) **Give two situations which may necessitate the preparation of artificial colostrum** **(1mk)**
    -   Death of mother / cow after birth
    -   Absence of a foster mother
    -   Mother /cow having been milked upto 4 days prior to parturition

                                                                ½ x 2 = 1mk

    c) **Give two uses of gears in a tractor.** **(1mk)**
    -   Provide different forward speeds
    -   Enable reversing
    -   Allows tractor stopping without switching off the engine

                                                                ½ x 2 = 1mk

9. a) **List two tools used for laying concrete blocks when constructing a wall** **(1mk)**
    -   Spirit level
    -   Plumb bob/plumb line
    -   Mason's square/tape measure
    -   String line
    -   Mason's chisel/bolsters
    -   mason's hammer

                                                                ½ x 2 = 1mk
    b) **List four characteristics of clean, high quality milk** **(2mks)**
    -   Free from pathogens
    -   Of standard chemical composition
    -   No physical dirt (like hairs, dust, dung)
    -   Good milk flavor
    -   High keeping quality

                                                                ½ x 4 = 2mks

10. a) **What is the cause of grass staggers in animals** **(1mk)**
        Magnesium deficiency

                                                                1x1=1mk

    b) **Give the meaning of the following terms as used in livestock health (2mks)**
        i) **Incubation period**
    Time from entry of disease germs (pathogen) to the time the symptoms show up
                                                                ½ x 2 = 1mk
        ii) **Mortality rate**
    Likelihood of death to occur in the herd incase of disease infection

11. a) **Write down the common examples of chemical causes of diseases among livestock** **(2mks)**
    -   If an animal eats, swallows or inhales chemicals like acids, alkalis, insecticides and herbicides it can be poisoned.
    -   Stings from certain insects in sensitive parts of the body can cause poisoning

- Some weeds in pasture are poisonous if eaten by animals for example Thorn apple (<u>Datura</u> <u>stramonium</u>)

(1x2=2mks)

b) **Name two main parts of a farm buildings** **(1mk)**
- Foundation
- Walls
- The roof   ½ x 2 = 1mk

c) **Name the breed of rabbit with black nose, ears and tail but the body is white**
(1mk)
Califonic white   1x1=1mk

12. **a)** **State two uses of a footbath in a cattle dip** **(1 mk)**
- To remove mud from foot of an animal
- To hold chemical to kill disease causing micro organism

½ x 2=1mk

b) **What is hybrid vigour or heterosis in breeding?** **(1mk)**
It is a condition where the offspring assume more superior traits than any of its parent
1x1=1mk

13. **a)** **What is the difference between a tenon and crosscut saw** **(1mk)**
Tenon saw is used to do fine sawing; small work cutting e.g joint while crosscut saw is used for cutting wood across the grain
1x1=1mk (mark as a whole)

b) **State two qualities of marketable size eggs** **(1mk)**
- Smooth shell
- Oval shaped
- Colour
- Size/weight
- Right shell hardness
- Cleanness
- Fresh   ½ x 2=1mk

14. **a)** **Give one reason for housing calves singly** **(1mk)**
- Avoid transmission of diseases and parasite from calf
- Discourage licking one another thus accumulating hair ball in rumen
1x1=1mk

b) **State two uses of a drawbar in a tractor** **(1mk)**
- Pulling the tractor-drawn trailer
- Pulling the tractor-drawn disc-horrows
- Pulling tractor-drawn rollers, planters, spreaders and sprayers

½ x2=1mk

15. **State two functions of corner posts in barbed wire fences** **(1mk)**
- Mark the turn point of boundary
- Hold the dropper in position

½ x 1=1mk

16. **State the difference between crutching and radddling** **(1mk)**
Crutching is the practice of cutting wool around the external reproductive organ of female sheep while raddling is the practice of fitting the ram with breeding chutes painted in different colours underside to identify the ewe it has mated
1x1=1mk
(Mark as a whole)

17.   **The illustration below shows part of the digestive system of a cow. Study it carefully and answer the questions that follow.**
        a) Identify the part labelled R on the diagram   **(1 mark)**
        Omasum   1x1=1mk

        b)   Which of the parts labelled is also referred to as:
        i)   The "book" or "many plies"   **($^1/_2$mk)**
                  R
        ii)   The "honey comb"   **($^1/_2$x1 mk)**
                  S

        c)   State two microbial activities that take place in the chamber labeled P?
                                                                                              (2mks)
        -       Fermentation of food
        -       Synthesis of vitamin B complex and vitamin K
        -       Synthesis of amino acids from ammonia
        -       Breakdown of carbohydrates and cellulose to carbon(IV) oxide and volatile fatty acids
                                                                                              1x2=2mks

        d)   State the role of esophageal groove in ruminants   **(1mk)**
                Allows movement of food from the mouth to the reticulum
                                                                                              1x1=1mk

18.   **The diagram E below illustrates an activity carried out by a farmer. Study the diagram and answer the questions that follow.**
        a) Identify the activity carried out in the structure labeled E above   **(1 mark)**
          Artificial incubation
                                                                                              1x1=1mk
        b) Name the parts labeled F and H in the structure E above   **(2mks)**
                  F   -   Thermometer
                  H   -   Source of heat/heater
                                                                                              1x2=2mks
        c)   State two conditions apart from air circulation in E above which are necessary for a successful activity being carried out   **(2mks)**
        -         Fertilized eggs
        -         Full unbroken eggs
        -         Humidity of atleast 60%
        -         Temp. 37^0C – 39.4^0C
        -         Egg turning to vertical position of 45^0
                                                                                              1x2=2mks

19.   **The diagram below illustrates a stroke in a four stroke cycle engine. Study it then answer the questions that follow. The arrows show the direction of motion of the piston**

        a)   Identify the stroke illustrated by the diagram   **(1 mark)**
                Induction stroke   1x1=1mk

        b) Identify the type of tractor engine illustrated in the diagram on the basis of type of fuel it uses   **(1 mark)**
                Petrol engine   1x1=1mk

        c)   Give a reason for your answer in (b) above   **(1 mark)**
                Presence of spark plug   1x1=1mk

d) **Name in the correct order the next two strokes which follow the illustrated above**

(2mks)

Compression stroke, followed by power stroke

1x2=2mks

20. **Diagram Q and R below illustrates a practice carried out on livestock. Study the diagrams and answer the questions that follow:**

a) **Identify the practice in Q and R** **(1mk)**

Identification of livestock

1x1=1mk

b) **Name the method carried out in Q and R** **(1mk)**

| **Q** | - | Ear notching | 1x1=1mk |
| **R** | - | Ear tagging | 1x1=1mk |

c) **State one advantage of R over Q** **(1mk)**

R is less injurious than Q to animals

1x1=1mk

d) **Give two reasons of carrying out the practice Q and R** **(2mks)**

- Identify lost and found animals
- Record on farm activities regarding health; breeding
- Discourage theft of livestock

1x2=2mks

SECTION C (40 MARKS)
ANSWER ANY TWO QUESTIONS IN THE SPACE PROVIDED

21. a) **Discuss the general methods of controlling livestock diseases** **(10mks)**

- Proper feeding and nutrition to avoid deficiency disorders
- Proper selection and breeding to get disease resistant animals
- Proper housing and hygiene to avoid overcrowding e.g. pneumonia
- Isolation of sick animals to avoid contact e.g foot and mouth
- Imposition of quarantine/legislation of rinderpest
- Use of propylactic drugs e.g coccidiostats
- Regular vaccinations to induce immunity e.g. brucellosis
- Slaughtering and burning or burying of infected animals e,g. anthrax
- Use of antiseptics and disinfectants e.g. in foot rot control
- Full vector control e.g. ticks and tsetse flies
- Treatment of sick animals to avoid source of infection
- Appropriate method of handling animals to avoid injury e.g. during branding, dehorning etc.

1x10=10mks

b) **Give five advantages of four-stroke cycle engines** **(5 marks)**

- The engines produce high power and can do heavy farm work
- Have efficient fuel and oil utilization
- Perform a wide range of farm operations
- Engines are efficiently cooled with water thus allowing the production of large engine sizes
- The exhaust gases are effectively expelled from the cylinders

1x5=5mks

c) **State five disadvantages of natural mating** **(5 marks)**

- There is high chance of inbreeding
- Possible to transmit breeding diseases

- Males will need extra pasture to eat that would have been used by female
- Large males can injure small heifers
- A lot of semen is wasted as single ejaculation produces semen that can serve several cows
- It is cumbersome and expensive to transport a bull

1x5=5mks

22. **a)** **Explain five factors to be considered when selecting a breeding stock**
(10mks)
- Appropriate age – young animal, those that have parturated for not more than three times should be selected.
- High level of performance; only those animals with high production level should be selected
- Absence of body defects/physical fitness – Animal selected should be free from physical defects e.g. mono-eye
- Proper body conformation – animal selected should be based on proper body conformation for desired breed
- Good temperament/behaviour –animal selected should not have undesired behaviour like aggressiveness
- High quality product – animal selected should have high quality products
- Good mothering ability – select animal with good natural instincts toward young ones
- Adaptability – animal selected should be well adapted to climatic conditions of the area
- High prolificacy – animal selected should be able to give birth to many off-springs at a time/regular breeding

1x5=5mks
Stating 1mk explanation 1mk total 10mks

b) Describe the essentials of clean milk production in dairy farming
(5 marks)
- Healthy dairy cows not suffering from mastitis etc.
- Clean dairy cows (teats)
- Healthy milk man not suffering from TB etc
- Clean milking shed
- Clean milking utensils
- Clean milkman i.e. whole body
- Milk filtration, cooling and storage
- Proper feeding to avoid flavours in milk
- Proper milking technique without injuring teats
- Use of all recommended milking materials e.g. udder cloth, filtering pads, etc.

1x5=5mks

c) **Outline the disease predisposing factors in livestock** **(5 marks)**
- Age of the animal
- Sex of the animal e.g. mastitis for females
- Colour of the animal e.g. black-heat stress
- Breed of the animal
- Species of the animal
- Change in environmental temperatures
- Heredity
- Overcrowding
- Presence of disease vectors
- Contact with other sick animals
- Physiological conditions

1x5=5mks

23. **a)** **State 5 symptoms of East Coast Fever** **(5 marks)**
- Swollen lymph nodes
- Animal develops a high temperature/fever

- Animal produces a lot of saliva (profuse salivation)
- Animal has difficulty in breathing (due to fluid accumulation in lungs)
- Coughing
- Lachrymation/ a lot of tears out of the eyes.
- Haemorrhages in the vulva and the mouth
- Sight impairment

1x5=5mks

b)   Give five advantages of using animal power   (5 marks)
- It require less skilled workers as compared to the engine power
- Animals are cheaper to buy and maintain compared to tractor engine power.
- Work output from animals is higher than that of human beings
- Animals can work in areas where it would be impossible for tractors e.g hilly areas.
- Animals work better on small holdings than tractors.

1x5=5mks

c)   Give five characteristics of beef cattle breed   (5 marks)
- Blocky/rectangular/square in shape
- Deep well fleshed bodies
- Grow fast leading to early maturity
- Efficient converter of food into meat
- Able to maintain good weight even during adverse conditions
- Good foragers
- Tolerant to high temperatures
- Breed regularly
- More resistant to diseases
- Short strong legs to support their heavy bodies

1x5=5mks

d)   Describe the reason why bees may abscond from a beehive   (5 marks)
- Shortage of food/flowers nearby
- Shortage of water
- Outbreak of a disease in the colony
- Attack by a parasite or parasites
- Damage of the brood combs
- Poor ventilation in the hive
- Dampness/leakage in the hive
- Noise e.g. posho mill nearby
- Bad smell from nearby
- Sick queen
- Infertile queen
- Overheating of the hive, exposed to the sun

1x5=5mks