AGRICULTURE PAPER 2

No.1. Name four rabbit breeds reared in Kenya. (2 marks)
- New Zealand white/Kenya white;
- California white;
- Flemish giant;
- Chinchilla;
- Rex;
- Angora;
- Ear lops;

No.2. Give the meaning of the following terms as used in livestock health:

a) Disease (1 mark)
- Any deviation or alteration in the state of animal body or its organs which interferes with proper performance of its functions.

b) Vaccination (1 mark)
Is the administration of a weakened or killed disease causing agent into the animal to induce production antibodies for immunity against the disease.

No.3. State four advantages of artificial calf rearing in dairy cattle management. (2 marks)
- Farmer is able to keep accurate records of milk yield
- Easy to regulate the amount of milk taken by the calf
- Cows produce milk even in the absence of the calves
- Allows for maintenance of high standard of hygiene during milking
- There is a possibility of the farmer selling more milk thereby maximizing profits.

No.4. List four materials that can be used in constructing a Kenya Top Bar Hive. (2 mark)
- Timber
- Nails
- Plain wire
- Iron sheets

No.5. Give four features of housing that help to control livestock diseases (2 marks)
- Well ventilated
- Well lit
- Easy to clean
- Free from droughts
- Spacious
- Leakproof
- Proper drainage

No.6. State four characteristics of the Duroc Jersey pig. (2 marks)
- Long body
- Black in colour
- Drooping ears
- Is hardy;
No. 7. Give four characteristics of a good site for a fish pond. (2 marks)
- Topography/slope of land should be gentle sloping.
- Reliable water source.
- Area with cracks/anthills should be avoided.
- Soil type/site should be free of gravel/stone/sand/preferably clay soil.
- Secure from predators and thieves.
- The site should be accessible.

No. 8. Name four systems of a tractor engine. (2 marks)
- Fuel system, 1
- Lubrication system.
- Electrical system.
- Ignition system.
- Cooling system.
- Hydraulic system
- Power transmission system

No. 9. What is dry cow therapy? (1 mark)
- The application of antibiotics into the teat canals of the cow’s udder after drying off the cow to prevent mastitis/bacteria infection.

No. 10. Give two reasons for steaming up in dairy cattle management. (2 marks)
- Ensures birth of a healthy calf
- Provides nutrients for maximum foetal growth
- Build up energy for parturition
- Increases and maintains high milk yield after birth/stimulates development of alveoli
- Promotes good health of the cow/mother
- Accustoms the cow to concentrate feeding

No. 11. State four maintenance practices for a disc plough. (2 marks)
- Cleaning after use
- Painting the frame
- Greasing the moving parts.
- Repair/replace broken/worn out parts.
- Metal parts on long storage.
- Proper storage

No. 12. List four preventive measures for livestock diseases. (2 marks)
- Vaccination
- Proper feeding
- Quarantine imposition
- Use of prophylactic drugs e.g. coccidiostaf
- Proper hygiene/use of antiseptic/disinfectants
- Treatment of sick animals; all aspects eg deworming, drenching
- Isolation of sick animals
- Proper selection and breeding
- Control of vectors
- Slaughtering sick animals/culling
No. 13. Give two reasons for using litter in a poultry house. (1 mark)
- To keep the house warm.
- To absorb moisture from poultry droppings.
- Keeps birds busy scratching, thus reducing cannibalism.

No. 14. State four disadvantages of fold system in poultry rearing (2 marks)
- Few birds per unit area.
- Laborious in moving the folds.
- Difficult to keep individual bird production records.
- Produces dirty eggs.
- Fold breaks easily due to constant movement.

No. 15. State four practices that come immediately after complete milking in a milking shed (2 marks)
- Teat dipping to control mastitis
- Weigh and record milk yield
- Sieve/strain/filter milk
- Application of milking jelly on teats
- Store milk in a cool place
- Clean the milk shed
- Release the animal
- Clean the milk equipment

No. 16. List four tools that are used when laying concrete blocks during construction of a wall. (2 marks)
- Plumb bob/plumb line
- Mason’s trowel
- Spirit level/pipe level
- Wood float/steel float
- Masons square
- String/masons line/line

No. 17 Below is a diagram illustrating an instrument used in cattle breeding.

(a) Identify the instrument (1 mark)
- Artificial vagina

(b) State the role of the instrument in cattle breeding. (1 mark)
- Collection of semen from bulls
(c) When would it be appropriate to serve a cow after the onset of heat? (1 mark)
   - Between 12-18 hours/at standing heat

(d) Apart from the method in which the above instrument is used, name two other methods of serving a cow. (2 marks)
   - Natural mating
   - Embryo transplant;

No.18. The diagram below is an illustration of an egg. Study it carefully and answer the questions that follow.

a) Name the parts labeled B, C, D and F
   - B - Inner shell membrane  - ½ Mark
   - C - Outer shell membrane  - ½ Mark
   - D - Albumen/egg white  - ½ Mark
   - F - Chalaza  - ½ Mark

(b) State two qualities of the part labeled A that should be considered when selecting eggs for incubation. (1 mark)
   - Texture/smoothness of the shell
   - Absence of cracks on the shell
   - Cleanliness/absence of blood stains
   - Oval in shape.

(c) What is the function of the part labeled E in a fertilized egg? (1 mark)
   - Provides nutrients for the developing embryo/chick.

No.19. The photograph below illustrates a method of identification labeled X in cattle.
a) Name the identification method  
   ❖ Branding  

b) Explain three disadvantages of the identification method.  
   (3 marks)  
   ❖ Reduces quality of hides/skins/because the heat damages the skin/hide  
   ❖ Causes the animal a lot of pain because it uses heat  
   ❖ Causes wounds which can result in infections  

No.20. Below is a diagram illustrating a farm implement. Study it and answer the questions that follow.  

a) Identify the implement illustrated above  
   ❖ A Ridger/mould board ridger.  

b) State the use of the:  
   i) Implement on the farm  
      ❖ To make ridges/furrows  
   ii) Part of the implement labelled j  
      ❖ used to attach the implement to a tractor.  
      ❖ Adjusting the depth of operation.  

No.21. Below is a diagram of a knapsack sprayer. Study it carefully and answer the questions that follow.  

(a) Name the parts labeled N, P, Q and R.  
   (2 marks)  
   ❖ N - Tank  
   ❖ P - Delivery note rej. hose pipe/hose alone  
   ❖ Q - trigger  
   ❖ R – Lance
(b) **State one function of the part labelled S**  (1 mark)
- Breaks the liquid chemical into desired size of droplets/spray form/fume droplets/jets

**No.22(a).(i)** Describe short-term tractor servicing.  (10 marks)
- The engine should be checked daily by use of dip stick and oil level maintained;
- The fuel level should be checked at the start of everyday’s work and added if necessary;
- Water level in the radiator should be inspected and if low topped up;
- The level of electrolyte should be checked daily and topped up with distilled water if low
- The nuts and bolts should be tightened every day;
- Grease should be applied regularly to the moving parts;
- Large sediments from the sediment bowl should be removed;
- Tyre pressure should be checked every morning before the day’s work and adjusted accordingly;
- The fan-belt tension should be checked to ensure that it deflects between 0 cm - 2.5 cm when pushed;
- The brake shaft bearing should be greased and break fluid level maintained;
- Lost bolts and nuts are replaced.

(ii) **Explain the maintenance practices that should be carried out on an ox-cart.** (5 marks)
- Moving parts should be oiled/ greased regularly to reduce friction (tear and wear);
- The yoke should be properly maintained eg. repair when worn out, replaced if not repairable, properly padded;
- Tyre pressure should be checked daily before the start of work;
- Broken trailer bodies should be repaired;
- Loose nuts and bolts should be tightened;
- Paint it if to be stored for long to avoid rusting;
- Clean after use;
- Store under shed;
- Replace lost nuts and bolts;
No.22b. State five indicators that can be observed on a goat to confirm sickness. (5 marks)

- By checking the appetite and feeding - if low or excessive it indicates that the goat is sick.
- Defaecation - inconsistency in texture, colour, smell, frequency and posture, presence of parasitic segments, egg, larvae or blood.
- Urination - irregular posture, colour and frequency;
- Change in temperature above or below the normal range;
- Respiratory rate - irregular respiration shown by non-rhythmic inspiration and expiration indicates ill health.
- Pulse rate - Abnormal pulse rate under normal physiological status indicates ill-health.
- Production level - Loss of weight, emaciation and reduced production rate.
- Abnormal discharges
- Posture - while standing or lying.
- Behaviour eg. abnormal sound, aggression, excitement.
- Appearance - eg. dullness, restlessness, pot belly, bloated.
- Movement eg. gait, eg, standing or limping when walking.
- Mucous membranes (abnormal) eg. bright red colour, yellowish, blueish depending on disease.
- Skin/animal coat - (abnormal) starring hair, coat, sores/wounds on skin.

No.23a. Describe the uses of fences on the farm. (10 marks)

- Mark boundaries.
- Help to avoid boundary disputes.
- Keep off wild animals and intruders from outside the farm.
- Enable the farmer to practice mixed farming.
- Facilitates rotational grazing.
- Controls movement of animals and people preventing formation of unnecessary paths in the farm.
- Control the spread of parasites and diseases by keeping off wild and stray animals the farm.
- Help the farmer to isolate or confine animals requiring special attention.
- Enable the farmer to control breeding by rearing different animals in different paddocks.
- Hedges act as windbreakers.
- Adds beauty to the farm,
- Add value
- For privacy

No.23b Give five harmful effects of liver flukes in sheep rearing. (5 marks)

- Digestive upsets due to blocking of bile duct.
- Emaciation/recumbency leading to death.
- Anaemia due to destruction-of-liver tissues.
- Swollen lower jaw/Oedema in the jaws.
- Swollen abdomen.
- Destruction of liver tissues / haemorrhage

No.23c. Explain the factors considered when culling livestock. (5 marks)

- Poor health;
- Old age;
- Physical deformities;
Hereditary defects;
Infertility;
Poor mothering ability
Poor quality products
Low production;
Bad temperament.
Avoid inbreeding


- Eyes - dull and pale yellow.
- Beak - yellowish in colour.
- Abdomen/breast - hard and full
- Vent - round, dry and less active
- Space between kee and pelvic bone - small and fits only one or two fingers
- Plumage - preened & glossy (smooth) beautiful
- Moultng - early moultng
- Shanks/feet - Yellowish in colour
- Broodiness - Is common/early moultng
- Temperament - easy and dull

No.24bi. Outline three characteristics of clean milk. (3 marks)
- Free from disease causing micro-organisms/pathogens
- Free from hair, dirt or dust.
- Free from bad odours and tastes/has good flavours.
- Chemical composition within expected standards.

No.24bii. Explain seven factors that affect milk composition in dairy farming. (7 marks)
- Age of animal - Butter fat in milk becomes less as an animal grows old thus young animals produce milk with higher BF than older animals.
- Breed differences e.g. Species of the animal
- Different breeds of cattle produce milk with differing percentage composition e.g Jersey produce higher BF than Friesian.
- Type of wood eaten by an animal - Roughage feeds produce link with higher fats, lactose and protein compared to grains.
- Diseases - Diseases such as mastitis reduce the lactose composition in milk because bacteria attack milk sugars.
- Physiological condition of the animal - Sick/extremely emaciated animals register low percentage of BF/during late pregnancy, cows produce milk with low BF content.
- Stage of lactation - The BF content in milk is highest at the middle phase of the lactation period and lowers towards end of lactation.
- Completeness of milking - Milk drawn last from udder during contains high BF content/last drop milk has BF content produce in the milk.
- Season of the year - accept environmental condition. BF content increases during cold seasons.
- Time of milking - Milk produced in the morning has a lower BF content than milk produced in the evening 1/2 factor method