## Kenya Certificate of Secondary Education AGRICULTURE PAPER 443/2

1.	Give three reasons why ewes disown lambs	(1 ½ marks)
	<ul> <li>Painful udder due to mastitis or injuries</li> </ul>	
	<ul> <li>Weak lambs that cannot follow and catch up with their mothers</li> </ul>	
	<ul> <li>Poor mothering ability or instinct</li> </ul>	
	- Low milk production	
2	- Poor feeding of the ewe	(2
Ζ.	Give two functions of each of the following parts of the egg	(2marks)
	a) Albumen	
	<ul> <li>Contains food for the developing embryo</li> </ul>	
	<ul> <li>Acts as a shock absorber to cushion light movements of the inner conten</li> </ul>	ts
	<ul> <li>Surround the yolk to keep it in position</li> </ul>	
	b) Egg shell	
	<ul> <li>Provides protection to the egg contents</li> </ul>	
	<ul> <li>Allows gaseous exchange in the egg</li> </ul>	
	<ul> <li>Prevents entry of micro-organisms into the egg</li> </ul>	
	<ul> <li>Gives the egg its shape</li> </ul>	
3.	What term is preferably used to refer to parturition in sows	(½ mark)
	– Farrowing	
4.	Give an intermediate host for the following internal parasites.	(1mark)
	a) Taenia saginata - cattle	
	b) Taenia solium - pigs	
5.	Give three symptoms of liver fluke attack in cattle.	(1 ½ marks)
	<ul> <li>Anaemia due to damage of the liver tissues</li> </ul>	
	<ul> <li>Fascioliasis due to damage of the liver</li> </ul>	
	– Emaciation and recumbency or unable to stand and death in acute attack	
	<ul> <li>Oedema or swollen lower jaw</li> </ul>	
	<ul> <li>Digestive upsets or disorder due to blockage of bile ducts</li> </ul>	
	<ul> <li>Swollen abdomen</li> </ul>	
	<ul> <li>Pot-bellied stomach</li> </ul>	
6.	Differentiate between selection and breeding in livestock production.	(2marks)
	<ul> <li>Selection is the choosing and allowing some animals to the parents of the</li> </ul>	e future
	generation while breeding is the mating of selected animals	
7.	Name the disease caused by the following organisms.	(1mark)
-	a) Fusiformis necrophorus - foot rot	(
	b) Bacillus anthracis - anthrax	
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8. State three symptoms of brucellosis in cattle. (1 ½ marks)

- Abortion / premature birth in late stage of gestation/5<sup>th</sup> and 6<sup>th</sup> month
- Yellowish / brownish slimy discharge from the vulva
- Retained after birth / placenta after abortion
- Cows /females become barren/sterile
- Bulls/males loss libido
- Inflammation of the testis in males (orchitis)
- 9. Give two reasons for carrying out inbreeding in livestock production. (1mark)
  - Increases phenotypic uniformity in the herd
  - Increases genetic uniformity in the herd
  - Builds up and retains desirable qualities within the herd
  - It is useful where there are chances of occurrence of epistasis
  - Used to test the animal's prepotency (ability to pass desirable qualities to the off-springs)
  - Helps to expose recessive genes within the herd for culling purposes.
  - Used to test for abnormalities in male animals such as hereditary defects
  - Used to get proven sires
- 10. State three precautions observed in handling vaccines in livestock disease control

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(1 ½ marks)
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(2 marks)

- Keep vaccines under freezing temperatures of -20<sup>o</sup>c -4<sup>o</sup>c
- Sterilize vaccination equipment
- Adhere to correct dosage
- Administer through the recommended route
- Observe the manufacturing and expiry dates on the container
- 11. Outline four effects of ticks on livestock
  - Suck blood causing anaemia
  - Cause wounds which act as routes for secondary infection
  - Transmit livestock diseases e g Anaplasmosis
  - Cause irritation leading to poor feeding and loss of weight in livestock
  - Their bites lower the quality of hides and skins
  - They produce toxins that cause adverse effects on the hosts
- 12. State three instances when a beekeeper may handle bees (1 ½ marks)
  - During stocking of the hive
  - During inspection of the combs/checking on the formation of honey
  - During honey harvesting
  - When moving a stocked hive from one place to another
- 13. Name the most appropriate tools used in the following operations (3marks)
  - a) Removing metal chippings in files Wire brush
  - b) Cutting wood along the grains ribsaw / tenon saw / backsaw
  - c) Cutting identification marks on ears of livestock Ear notcher

14. Name a pig breed that is large, white in colour, with a dished snout and erect ears

		(1mark)
-	<ul> <li>Large white</li> </ul>	
15. (	Give four maintenance practices of a spray race	(2marks)
-	Clean and unblock the blocked nozzles	
-	Replace the broken rails and posts	
-	Repair worn out floors and walls	
-	Clean and remove sediments from the sump regularly	
16. 9	State four features of a good grains store	(2marks)
_	The roof should be water or leak proof	
-	Vermin proof	
-	Raised 50cm above the ground to avoid dampness	
-	Clean and easy to clean	
-	Strong to support the weight of the produce	
-	Easy to load and off-load	
_	Well secured	
-	Well ventilated	
_	Should have cool conditions to prevent overheating and cracking of the grains	
17. (	Give two reasons for carrying out crutching in sheep management	(1mark)
-	Facilitate mating	
_	Minimize blowfly infestation	
_	Provide hygienic condition at lambing	
_	Allow easy access to teats by the lambs	
_	Provide hygienic suckling conditions	
18. 9	State two methods of carrying out caponisation	(1mark
-	Surgical method	
_	Chemical method/use of synthetic hormones	
19. (	Give four reasons for castrating male calves	(2marks)
_	It controls breeding	
_	Controls inbreeding	
_	Controls the spread of breeding diseases	
_	Enhances faster growth rate and fattening	
_	Castrated male animals are docile and easy to handle Reduces sexual excitament of male enimals leading to breaking of form structures	fance
_	Enhances fattening	/Tence
20. (	Give two reasons why a farmer should provide a lambing pen for ewes durin	g parturition
	- The new born lamb is not trampled upon by other sheep	
-	<ul> <li>Prevents the lamb from wandering away from the mother</li> </ul>	
-	- Prevents the lamb from getting chilled	

- Reduces the disowning of lambs

21.

a) Identify the method of incubation illustrated above (1mark)

- Natural incubation
- b) Give two signs that may show that the hen is ready to incubate the eggs (2marks)
  - Molting of the hen/sheds feathers
  - Tendency to sit on the eggs after laying
  - Making some noise at the laying nests
  - Feathers are raised
  - The hen becomes aggressive when disturbed
  - The hen stops laying
- c) State two problems of using the above method to hatch chicks (2marks)
  - Few chicks are hatched at a time
  - Low egg production as the hen will not lay eggs during incubation
  - The farmer cannot plan when to incubate eggs
  - Diseases and parasites can easily spread to chicks
  - It is only possible with broody hens \_
  - If the hen dies all the eggs will be destroyed
  - If the hen deserts the eggs the farmer incurs total loss. \_
  - Predators can destroy the eggs

22. Below is an illustration of a farm structure. Study it and the questions that follow



- a) Identify the above farm structure
- b) Name the parts labeled T, S, R, P
  - T Entrance
  - S Foot bath
  - R Dip tank/dip wash
  - P Drainage race
- c) State four factors considered when sitting the above structure (4marks)
- Drainage: sited in an area that is not subjected to floods
- Type of soil: sited on soil that is resistant to soil erosion
- Source of water: sited near a reliable source of plenty water as it requires a lo of water
- Away from natural sources of water –(100m)
- Where it is possible to dispose sediments from the dip tank without causing environmental pollution
- Centrally sited so that animals don't walk long distances

(2marks)

(1mark)

d) Outline four management practices observed on cattle while using the above structure

(4marks)

- Water the animals before dipping
- First run 10-15 through the dip to mix the dip wash and the dip them a second time
- Arrange the animals to enter the dip in a single file
- Do not dip sick or pregnant animals
- Dip animals according to their ages
- Dip all the animals on the same day
- Keep records
- 23. The illustrations below show a practice in layer birds. Use them to answer the questions that follow



a)	What practice is represented above	(1 mark)
	<ul> <li>De-beaking</li> </ul>	
b)	Which illustration shows the correct way of carrying out the practice	(1mark)
	– P	
c)	State two reasons for carrying out this practice in poultry	(2marks)
	<ul> <li>To control egg eating</li> </ul>	
	<ul> <li>To control cannibalism</li> </ul>	
	<ul> <li>To control feather plucking</li> </ul>	
	<ul> <li>To control toe pecking</li> </ul>	
24.	(a) Outline the precautions observed when handling bees.	(7marks)
	<ul> <li>Approach the beehive from behind always</li> </ul>	
	<ul> <li>Avoid frightening the bees as this makes then wild and sting</li> </ul>	
	<ul> <li>Wear protective clothing be in the right attire when handling bees</li> </ul>	
	<ul> <li>Use the smoker properly i. e apply 2- 3 puffs of smoke around the hive then direct entrance holes</li> </ul>	ctly into through
	– Do not crush with the bees as this will make the whole colony excited	
	<ul> <li>Move quietly towards the beehive to avoid alerting them</li> </ul>	
	<ul> <li>If stung do not run away or throw combs down</li> </ul>	
	<ul> <li>If stung scrap off the stings with a sharp nail/razor blade. Rubbing releases more body</li> </ul>	poison into the

(b) State the duties of a worker bee in a bee colony. (5marks)

- They feed the queen and the brood
- Clean the hive
- Protect the hive from intruders as they have stings
- Build the combs using wax that they secrete from the glands
- Collect pollen and nectar
- Make honey and wax
- Place the eggs in the comb cells
- Regulate temperature in the hive
- Seal cracks in the hive

(c) Describe the procedure of extracting honey from honeycombs using heat method. (8marks)

- The honey combs are placed in a plastic container which is immersed in boiling water in another container
- The combs are heated until honey melts
- The honey is separated from the combs by straining using a muslin cloth into clean container
- Allow the honey to cool
- Remove the wax layer that forms on honey surface
- Pack the honey in clean containers ready for marketing

## 25. (a) What are the factors put into consideration during selection of the breeding stock

(10marks)

- Age of the animal: Select young animals which have given-birth not more than three times because production and breeding efficiency declines with age and have long productive life.
- The level of production: Select animals with the highest production depending on the type using performance records
- Health: Select health breeding stock as they are resistant to diseases, produce well and economical to keep
- Body conformation/appearance: Select animals according to proper body appearance depending on the purpose e g dairy or beef cattle
- Behavior/temperament of the animals: Select animals with good behavior. Those with bad behavior such as kicking, aggressive, egg eating and cannibalism should not be selected
- Quality of the products: Select animals that give high quality products e g milk, wool, eggs and meat
- Mothering ability: Select animal with ability to rear the young ones up up weaning
- Adaptability to the environment: Select animals that are suited or adapted to the prevailing environmental conditions of the area
- Prolificacy: Select highly prolific animals i.e. have the ability to give birth to many young ones at a time (large litter in pig and rabbits)
- Fertility: Select fertile animals that breed regularly
- Genetic and physical defects: Selected animals should be free of physical defects such as broken leg, limping and genetic defects such one eyed, over shot, under shot, irregular number of teat etc.
- Growth rate: Select animals that give birth to fast growing and maturing off-springs

## (b) Outline the factors that influence the choice of building materials. (10 marks)

- Availability of the materials
- Durability of the materials
- Cost if the materials in relation to capital available

- Suitability of the materials to prevailing weather conditions
- Strength of the materials
- Workability of the materials/availability of skills required to use the materials
- Kind of the structure I e permanent or temporary. Suitability of the materials in relation to the structure/farm enterprise.

26. (a) Outline the importance of fences in a mixed farm.

- The perimeter fences mark the boundary/ demarcate the farm from that of the neighbor hence reduce land disputes.

(10marks)

- Provide security to the homestead and livestock/keep away intruders such as predators and trespassers.
- Facilitates rotational grazing e g paddocking
- Facilitate mixed farming by separating crop fields from pastures
- Control the spread of parasites and diseases by separating sick animals and keeping away wild animals
- Hedges act as wind breaks.
- Help to control breeding by having animals in different paddocks
- Prevent the formation of unnecessary paths on the farm.
- Protect water sources from pollution.
- Hedges and solid fences provide privacy in the homestead.
- Conserve soil and water i e act as barriers to run-off, roots hold soil particles together and leaves add organic matter to increase water infiltration.
- Hedges may be a source of fruits, firewood and livestock feed.
- Add beauty to the farm aesthetic value.
- Increase the value of the farm as fences are regarded as assets when valuing the farm.
- (b) Describe the procedure of establishing a timber post and barbed wire fence. (10marks)
- Clear the fence line (1m wide)
- Measure and mark points where holes are to be made (4 -6m interval)
- Determine the position of corner and gate posts
- Dig holes 60cm deep for intermediate posts and 90cm for corner and gate posts.
- Place posts upright in the holes
- Mix and place concrete in each hole and firm it
- Reinforce corner/gate posts by use of struts/brace
- Nail strands of barbed wire onto the posts using staples while stretching using a wire strainer at 30-50 cm interval
- Fix the lower strand of wire first at 10cm from the ground and use it as a guide to fix the next.
- Intertwine droppers across the wire strand at 25cm intervals.