FORM 3 EXAMINATION, 2022

Kenya Certificate of Secondary Education

443/2
AGRICULTURE
PAPER 2 (THEORY)

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1.	Factors to consider when using farm	Clean the hive.	
	structures	• Collect nectar, pollen and tree resins.	
•	Accessibility	• Collect water.	
٠	Location of homestead	• Guard the hive.	
٠	Topography	• Feed the queen.	
•	Proximity to amenities	• Feed the brood and drones.	
٠	Farmer tastes and preferences	• Built combs and seal cracks	
•	Relationship between structure	• Make honey and bee wax.	
•	Direction of prevailing wind.	$Any \ 4 \times \frac{1}{2} = 2 \ mk$	S
•	Drainage. Any $4 \times \frac{1}{2} = 2 mks$	7. Crutching is the practice of cutting wool	
2.	Reasons for keeping livestock healthy.	around the external reproduction organ of a	L
٠	Healthy animals produce good quality	female sheep while ringing is the practice of	
	products	trimming wool around the sheath of the per	nis
•	Healthy animals give maximum production.	of rams to facilitate mating.	
•	Healthy animals do not spread diseases to	$1 \times l = lm$ (mark as a who	ole)
	animals or human.	8. Methods of preserving fish.	
٠	Good health gives animals a longer economic	• Sun drying	
	and productive life.	• Salting	
•	Healthy animals grow well and fast to reach	• Freezing	
	maturity quickly.	• Smoking $Any 4 \times \frac{1}{2} = 2 mks$	
•	Healthy animals are economical and easy to	9. Factors determining nutritional	
•	keep. $Any 4 \times \frac{1}{2} = 2 mks$	requirement of an animal.	
3.	Dairy goats include:	• Age	
•	Saanen	Body weight	
•	Toggenburg	Physiological condition	
•	British alphine $Any 2 \times \frac{1}{2} = 1 mk.$	• Exercise /Activity.	
4.	Tao tao filing	• Level of production.	
•	Tse tse flies	• Weather condition. Any $4 \times \frac{1}{2} = 2 mk$	
•	Keds	10. Rip saw are used for cutting along grains of wood while cross cut saw is used for cutting	
•	Mosquitoes	across the grains.	g
•	Flies	$1 \times 1 = 1 mks$	
•	Lice Fleas $Any 4 \times \frac{1}{2} = 2 mks$	11. Signs of parturition in cattle	
• 5.	Fleas $Any 4 \times \frac{1}{2} = 2 mks$ Precautions when using workshop tools.	• Restleness	
J. ●	Tools should always be left in safe place after	• Swollen vulva	
•	use.	• Clear mucus discharge from the vulva.	
•	Use the correct tool for the correct purpose.	• Pelvis muscles slacken.	
•	Tools should be maintained and serviced to	• Full and distended udder.	
•	remain in good working conditions.	• Thick milk from the teats.	
•	Tools should be handled correctly in use.	 Water bag appears and burst before calving 	
•	Use safety devices to reduce accidents.	$Any 4 \times \frac{1}{2} = 2 mk$	
•	All tools should be stored properly in a tool		
-	cabinet or tool racks. Any $4 \times \frac{1}{2} = 2$ mks		
		12. Sources of energy concentrates.	
6.	Duties of a worker bee:	• By products of flour mills.	
		-	

	Agriculture paper 2 ms
 By product of breweries. By products of sugar industries Whole grain 4× 1/2 = 2 mks 13. Signs of heat in a rabbit. Restlessness Frequent urination Swollen vulva Doe throws itself on its side. Doe rubs against the ball. Doe try to attract other rabbit's in the next hutch. Any 4× 1/2 = 2 mks 14. Predisposing factors of livestock diseases. Age Sex Colour Species Breed Physiological condition Environment Overcrowding. Any 4× 1/2 = 2 mks 	 15. Structures necessary for handling dairy animals. Milking shed/parlour Crush Spray race/plunge dip. Calf pen 4× ½ =2 mks 16. Ways in which underground water sources can be polluted. Run –off water Contamination with sewage /human waste. Oils and acids from washing of machinery. Mixing with chemicals from the farm. 17. Ways that show good feeding help to control livestock diseases. Control deficiency diseases Impart resistance to diseases. Enhance good physical appearance /good coat cover. Any 2× ½ =1 mks 18. Cropping is remove of marketable size fish from the pond. 1×1=1 mk
19. Maize 8% (½ m) Soya 43 % (½ m) Total parts = 28 + 7 = 35 parts (½ m) (i) Kg of maize = $\frac{28}{35} \times 100 = 80kg (1m)$ ii) kg of soya = $\frac{7}{35} \times 100 = 20 kg (1m)$ 20. (a) Casting an animal (b) • When inspecting an animal • When castrating an animal. • When dehorning /disbudding.	$28 \text{ parts of maize } (\frac{1}{2} \text{ m})$ 15% $(\frac{1}{2}\% \text{ m})$ $7 \text{ parts of soya } (\frac{1}{2} \text{ m})$ $A-Rumen$ $B-Reticulum$ $C-Omasum$ $D-Abomasum$ $4 \times \frac{1}{2} = 2 \text{ mks}$ $1 \times l = 1 \text{ mk}$

- When branding
- When trimming hooves. Any $4 \times \frac{1}{2} = 2 mks$ (c)
- When the animal is pregnant.
- When the animal has physical injuries. $2 \times 1 = 2mks$

- (c)
- Fermentation of food.
- Synthesis of vitamin B complex and K.
- Breakdown of proteins to peptides, amino acid and ammonia.
- Breakdown of carbohydrates /cellulose in to volatile fatty acids. Any $2 \times l = 2$ mks

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22 (a)
E-wood rasp
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21 (a)

 (c) Lubricant moving parts Lubricant moving parts Oil to prevent rusting. Clean after use. Any 1×1=1m (2) (a) Importance of fencing. Perimeter fence demarcates the farm land from that of neighbours. Fence keeps off wild animals and other intruders. Fence keeps off wild animals and other intruders. Fences are used to separate crop fields from pastures facilitating mixed farming. They provide security to the homestead and farm animals. They enable farmer to control breeding. They help to isolate sick animals from the rest thus preventing diseases. They are used to divide pasture in to paddocks facilitating controlled grazing system. Controls the movement of animals and people preventing formation of unnecessary paths in the farm. Fences help to control the spread of parasites and diseases by keeping off wild animals. Any 8×1=1=8 mks (b) Structural requirements of a calf pen. Leak proof roof-The roof should not leak to avoid wetness. Draught free-The calf pen should be constructed in such a way that the windward 		Agriculture paper 2 ms
H-Tin - snip. $4 \times \frac{1}{2} = 2 mks$ (b) E - smoothing wood surface /curved surfaces. F - Holding objects securely while carrying out various operations. G - Driving wood chisels. H - Cuting thin sheet of metal. $4 \times \frac{1}{2} = 2 mks$ (c) Lubricant moving parts Oil to prevent rusting. Clean after use. $Any 1 \times 1 = 1m$ 23. (a) Importance of fencing. They mortance of fencing. They provide security to the homestead and farm animals. They help to isolate sick animals from the rest thus preventing diseases. They are used to divide pasture in to paddocks facilitating control de grazing system. Controls the movements of a calf pen. Leak proof roof-The roof should not leak to avoid wetness. Draught free-The calf pen should be constructed in such a way that the windward		• Adequate space-calf pen should be large
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side wall is completely solid to prevent cold by highly infectious and contagious disease.	constructed in such a way that the windward	• Slaughtering affected animals-Incase of attack
	side wall is completely solid to prevent cold	by highly infectious and contagious disease,
wind. it's advisable to isolate and slaughter the	wind.	
Proper drainage-The area should be well infected animal.	• Proper drainage-The area should be well	-
drained .Poor drainage cause dampness which • Use of anti-septic and disinfectants-This		• Use of anti-septic and disinfectants-This
predisposes the calf to infections. ensures cleanliness in the animal houses and		-
• Proper lighting –Calf pen should be properly surroundings.		
lit to enhance synthesis of vitamin D. • Use of prophylactic drugs-include		-
• Single housing-Only one calf should be coccidiostats, drenching animals, use of long	-	
allowed in a pen to prevent calves from lasting drugs and addition of antibiotics in		
licking each other.		
5	•	 Carrying regular vaccination –it's an artificial
a pen to prevent calves from licking each way of giving an ani8mal some immunity		
other. against particular disease.		
against particular discuse.		I ugunist particular discuse.

Agriculture paper 2 ms

Agriculture paper 2 ms

• Control of vectors-This help to control transmission of particular diseases such as trypanosomiasis and East Coast Fever.

Any $6 \times 2 = 12$ mks Stating $6 \times 1 = 6$ mks Explanation $6 \times 1 = 6$ mks

(b) Life cycle of two host tick.

- Eggs on the ground hatch in to larvae which climb onto the first host.
- Larvae attach themselves to the host, feed on blood, become engorged and moult in nymph.
- Nymph feeds on the same host, become engorged and then drops on the ground to moult to adults.
- Adults seek a second host on which they feed.
- Adults mate before females fall off to lay eggs. 5×1=5 mks
- (c) Control measures of tapeworm
- Proper meat inspection
- Proper cooking of meat
- Use of latrines by farm workers
- Keep feeding and watering equipment clean.
- Practice rotational grazing.
- Keep animal houses clean.
- Use of prophylactic drugs.

Any $3 \times 1 = 3mks$

25 (a) Characteristics of indigenous cattle breeds.

- Have humps that store fat which is broken down to energy and water during starvation.
- They are fairly tolerant to high temperatures due to presence of dewlap.
- They have high tolerance to tropical diseases e.g. trypanosomiasis.
- They have4 slow growth rate leading to slow maturity.
- They have low production of both meat and milk.
- They can walk for long period without food and water.
- They have long calving internal for more than a year. $8 \times 1 = 8 \ mks$

(b) Differences between large white and land

race.

Large white	Land race	
Has bread and	Has straight snout.	

slightly dished snout.	
Has got upright ears	Has long ears which
	drop over the face.
Skin may have few	Completely white in
blue spot s.	colour.
Large body	Lean body.

 $4 \times 1 = 4$ mks

(Mark as a whole)

(c) Management of cattle during parturition.

- Separate cow from the rest and put in a separate paddock /stall.
- Watch the animal closely.
- Assist animal in case of difficulties
- Allow the cow to clean the calf to facilitate quick and efficient breathing.
- Assist the calf to breath in case of problems.
- Tie and cut the navel cord with a sterilized razor or knife.
- Disinfect the navel cord using iodine
- Ensure placentas are expelled within 24hrs after calving.
- Contact a veterinarian to remove the placenta incase its refrained.
- Assist the calf to suckle colostrum.
- Give the cow plenty of clean water and feed. $Any 8 \times l = 8 mks$