

AGRICULTURE PAPER TWO MARKING SCHEME

<u>No.</u>	<u>Answer</u>	<u>Marks</u>
<u>SECTION A(30 MARKS)</u>		
1.	<u>harmful effects of tsetse flies:</u> ✓Transmit the disease trypanosomiasis. ✓Suck blood thereby causing anaemia ✓Their bites cause damage to skins ✓Bites cause wounds which may act as routes for secondary infections by pathogens ✓Cause irritation to the animal.	2
2.	<u>reasons why dorper breed of sheep is good for mutton production.</u> ✓Produce high quality carcass ✓ Is highly prolific ✓Grows fast and matures early ✓Adapted to hot and dry areas	2
3.	<u>ways in which vaccines are administered to livestock.</u> ✓Through injections✓Orally through the mouth✓Through the nose/inhalation✓Through the cloaca✓Through the eye/ocular	2
4.	<u>reasons for proper feeding in livestock rearing.</u> ✓ Increase production ✓Protection against diseases ✓Reproduction ✓Maintenance ✓Increase quality of products.	2
5.	<u>microbial activities that occur in the rumen</u> ✓Temporary food storage	2

	✓Synthesis of vitamin B complex ✓Synthesis of amino acids from ammonia gas ✓Breakdown of proteins to peptides, amino acids and ammonia ✓Fermentation of food ✓Breakdown of carbohydrates and cellulose to carbon(iv) oxide and volatile fatty acids ✓Absorption of volatile fatty acids and ammonia through the ruminal wall	
6.	<u>advantages of the Kenya Top Bar Hive (K.T.B.H.) over the log hive.</u> ✓Top bars can be removed and replaced to inspect the combs. ✓Honey combs are harvested without disturbing the brood. ✓Good quality honey is harvested without brood combs. ✓More wax is harvested because combs are not returned to the hive. ✓It is easy to construct and repair ✓Utilizes queen excluder to separate honey combs from the brood combs.✓Is cheap to extract honey	2
7.	<u>ways in which a production ration may be utilised by livestock</u> ✓Synthesis/ formation of various products e.g. milk, meat ✓Foetal development ✓For work/ provide draft energy ✓Growth	2
8.	<u>symptoms of rinderpest in cattle.</u> ✓Fever ✓Starring coat ✓Discharges in the mouth and nose ✓Watery eyes/lacrimation ✓Diarrhoea and dysentery ✓Red mucal membranes With ulcers	2

	✓Tooth grinding ✓Emaciation ✓Dullness ✓Loss of appetite/anorexia	
9.	(a) Mallet (½ marks) Driving wood chisel (b) Trocar and canula (½ marks) Removal of accumulated gases which cause bloat in ruminants. (c) Garden line (½ marks) Setting straight lines; measuring distances; Stock and die (½ marks) Cutting threads on pipes	2
10.	<u>maintenance practices carried out on a wheelbarrow.</u> ✓Greasing/lubricating the moving parts ✓Repairing broken parts ✓Replacing worn out parts ✓Cleaning after use ✓Proper storage ✓Tightening loose nuts and bolts ✓Painting to prevent rusting ✓Apply old engine oil	2
11.	<u>limitations of using solar power on the farm.</u> ✓Solar trapping devices are expensive. ✓Power supply/trapping fluctuates depending on weather conditions.	2

	✓Solar trapping is limited to day light. ✓Requires skilled labour	
12.	<u>reasons why a farmer would choose to use a disc plough rather than a mould board plough.</u> ✓Disc ploughs work better in dry/ sticky and hard soils than mould board plough ✓There is less hindrance to operations chances of breakages because the discs roll/ ride over obstacles ✓The maintenance costs of disc plough are lower than the moldboard ✓Disc plough require less tractor power to pull than moldboard	2
13.	(a)tapping and serving (1 mark)Tapping;act of mating in sheep and goatsServing;act of mating in catt1es and pigs(b) ringing and raddling (1 mark)	2
14.	<u>causes of warming of bees</u> ✓Shortage of food and water in the sorroundings ✓Outbreak of diseases and parasites ✓Damage of brood combs ✓Lack of adequate ventilation ✓Dampness and bad smell ✓Sick or infertile queen✓Overcrowding	2
15.	<u>causal organism for East Coast Fever.</u> (½ marks) ✓Protozoa/Theileria parva (b). ways in which infectious diseases spread from one animal to another. (1½ marks) ✓Through contact ✓Through inhalation ✓Through ingestion	
<u>SECTION B (20 MARKS)</u>		
16.	(a). <u>Name the parts labeled B,C,D and F</u> (2 marks)	5

	✓B -Inner shell membrane ✓C -outer shell membrane ✓D -Albumen/ egg white ✓F - Chalaza (b).<u>State two qualities of the part labeled A that should be considered when selecting eggs for incubation.</u> (2marks) ✓Texture/ smoothness of the shell ✓Absence of cracks on the shell ✓Cleanliness ✓Cleanliness/ absence of blood stains ✓Oval in shape. (c).What is the function of the part labeled E in a fertilized egg? (1mark) ✓Provides nutrients for the developing embryo/ chick.	
17.	(a). <u>Name the parts labelled F and H.</u> (2marks) ✓F; Cervix ✓H;Oviduct/Fallopian tube b) <u>Give two functions of the part labelled G.</u> (2 marks) ✓Produces ova/female gametes ✓Produces hormones that control ovulation cycle/estrogen cycle c) <u>Give the role of the part labelled J</u> (1 mark) ✓Allows implantation of the zygote and development of the foetus. ✓Contracts to expel foetus ✓Implantation of the foetus	5
18.	a) <u>Identify the parts labeled B1, B2 and B3.</u> (3 marks) ✓B1 ; alveoli cells/milk secretory cells/lactiferous alveoli	5

	✓B2 ; lactiferous duct/mammary duct/milk duct ✓B3 ; Gland cistern (b) <u>Give one function of the part labeled B1</u> (1 mark) ✓Milk secretion/milk synthesis (c)<u>Name the part of the teat which is likely to be injured by poor hand milking technique.</u> (1mark) ✓The lining of teat cistern/sinus/teat canal																						
19.	(a) <u>Identify the parts labelled A and C.</u> A (1 mark)✓PurlinC (1 mark)✓Rafter(b) <u>State two types of materials that may be used for the part labelled D.</u> (2 marks)✓Timber/wood✓Plastic✓Metal(c) <u>Give one disadvantage of using thatch for the part labelled B.</u> (1mark)✓Fire risk✓Prone to insect damage	5																					
<u>SECTION C (40 Marks)</u>																							
20.	(a).<u>Describe upgrading as a method of improving indigenous cattle for milk production (12 marks)</u> (a) Select a high grade pure breed bull; and a Well managed low grade heifer; mate them to produce a heifer with half of the sire's genes; mate the heifer with a sire of the same pure breed as the original sire; Subsequent heifers should be mated with sires of the same pure breed as original sire; up to the sixth cross/generation; to produce a hygrade heifer with over 98% genes of the pure breed high grade bull or Parental Genotype (P) <table border="1"> <thead> <tr> <th>Generation</th> <th>Genotype</th> <th>Ratio</th> </tr> </thead> <tbody> <tr> <td>F₁</td> <td>AB</td> <td>50% : 50%</td> </tr> <tr> <td>F₂</td> <td>AAB</td> <td>75% : 25%</td> </tr> <tr> <td>F₃</td> <td>AAAB</td> <td>87.5% : 12.5%</td> </tr> <tr> <td>F₄</td> <td>AAAAAB</td> <td>93.75% : 6.25%</td> </tr> <tr> <td>F₅</td> <td>AAAAAAB</td> <td>96.875% : 3.125%</td> </tr> <tr> <td>F₆</td> <td>AAAAAAB</td> <td>98.4375% : 1.5625%</td> </tr> </tbody> </table>	Generation	Genotype	Ratio	F ₁	AB	50% : 50%	F ₂	AAB	75% : 25%	F ₃	AAAB	87.5% : 12.5%	F ₄	AAAAAB	93.75% : 6.25%	F ₅	AAAAAAB	96.875% : 3.125%	F ₆	AAAAAAB	98.4375% : 1.5625%	12
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	(b). <u>Describe anaplasmosis (gall sickness) disease under the following sub-headings:</u> (i) causal organism (1 mark) protozoa/ Anaplasma marginale naplasma centrane (ii) modes of transmission (2 marks) BLue ticks; red legged tick; contaminated surgical instruments; hypodermic needles; contaminated blood; biting insects; (iii) symptoms (3 marks) Fever Constipation Pale eyes, gums and lips Reduced milk production Anaemia (iv) control measures. (2 marks) Control ticks; and biting insects; Treatment using intramuscular injections of antibiotics; and iron giving injections	8
21.	(a). ✓Cleanliness; pens should have concrete floors to facilitate cleaning. ✓Dryness and warmth; dry litter should be placed on the floor to avoid dampness / wetness. ✓Roof should not leak / avoid spilling water on the floor to discourage dampness and wetness of the litter. ✓Adequate space; should be spacious for exercise, feeding and watering of calves. ✓Proper lighting; should be well lit as light is necessary for synthesis of vitamin D. ✓Proper drainage;should be constructed on a well-drained place to avoid dampness. ✓Draught free; to prevent entry of cold winds and discourage infections like pneumonia.	6

	✓Proper ventilation ; to allow free air circulations. ✓Single housing ; calves should be housed singly to prevent licking one another which can lead to formation of hair balls in the rumen.	
	(b). ✓Ox- drawn mould board is lighter hence does not compact the soil as much as the tractor –drawn mould board plough ✓Ox – plough can be use for more farm operations e.g. weeding, ploughing harvesting roots crops than tractors mould board. ✓Ox- plough requires less skills to operate compared to the tractor plough ✓Tractor plough is faster than ox- plough hence can plough a large area with a short time ✓Source of power for ox- plough is not as reliable as the source of power for tractor plough ✓Ox- plough relatively shallow compared to tractor plough that plough deeper ✓Ox- plough can be used in steeper lands where tractor plough cannot plough ✓Ox- plough requires more people to operate than tractor plough ✓Ox - plough is cheaper to buy than tractor plough ✓Ox - plough is cheaper to maintain than tractor plough	6
	(c). <u>symptoms of tapeworm infestation in cattle.</u> (8 marks) ✓Pot bellies ✓Starring coat ✓Anaemia ✓Emaciation ✓Constipation due to indigestion ✓Oedematous swellings under the jaw; ✓Proglottids observed in the dung	8

	✓Excessive appetite ✓Obstruction of intestines on heavy infestation	
22.	(a). <u>disease control routine management practices in calf rearing.</u> (8 marks) ✓Culling highly susceptible calves. ✓Drenching with antihelminthes to control internal parasites. ✓Vaccinate as appropriate against diseases - ✓Castration of males not required for breeding. ✓Identification at the appropriate age to facilitate record keeping ✓Removal of any extra teats if more than four. ✓Debudding/Dehoming ✓Proper feeding of the calf. ✓Treat the sick. ✓Isolate the sick calves. ✓Maintenance of hygiene	
	(b). <u>management of growers in poultry rearing.</u> (6 marks) ✓Provide adequate floor space, feeders, and waterers; ✓Provide litter on the floor up to 15cm deep; ✓ Provide growers mash adlib; ✓Provide plenty fresh water; ✓Dust the birds with appropriate insecticides to control external parasites; ✓Keep the litter dry to avoid dampness; ✓Provide grit or oyster shells towards the end of growers stage/at 12 weeks; ✓Gradually introduce layers' mash from the 16th week until it completely replaces growers' mash at 18th — 19th week.	6

	(c). <u>indicators that can be observed on a goat to confirm sickness.</u> (6 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 parasite segments, egg, larvae or blood ✓ Urination - irregular posture, colour and 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.	6
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