SECTION A (30 marks)

443/2 Marking Scheme

1. Four differences between dromedary and bactrian

Dromedary	Bactrian
– One hump	– Two humps
– Larger / Bigger	– Smaller /
– Less ~~far~~ Fur	– More ~~far~~ Fur
– Found in the tropic	– Temperate areas

(4 x ½ mark) (2 marks)

2. Four signs of broodiness

- Continuously stay in laying nest.
- Produces characteristics noise when disturbed. / Cracking Sound.
- Hen pluck off some feathers.
- Hen stops laying.
- Making the nest/nesting.
- Becomes aggressive.

(4 x ½ mark) (2 marks)

3. Four ways of controlling predators in fish pond.

- Trapping.
- Fencing.
- Use of net/covering the pond with net.
- Poisoning.
- Use of scarecrow.
- Clearing vegetation around Pond to discourage Predators

(4 x ½ mark) (2 marks)

4. Four reasons why bees swarm.

- Shortage of food ~~and water~~.
- Outbreak of disease ~~and parasite~~.
- Lack of adequate ventilation/~~high temperature~~.
- Dampness and ~~bad smell~~.
- Sick or infertile / death of queen.
- Overcrowding.
- Disturbance.
- Shortage of water
- Parasites infestations
- Overheating / high temperatures
- Bad smell
- Damage of brood Combs

(4 x ½ mark) (2 marks)

5. Four reasons for creep area.

- Provide warmth. / Correct Temperature
- Protect ~~highest~~ Right from being crushed by mother.
- Provide creep feed.
- Prevent mother from feeding on creep ~~food~~. feed

(4 x ½ mark) (2 marks)

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6.	**Four reasons for providing green vegetable leaves in deep litter:** – Opportunity for birds to exercise. – Enhance the yellow pigmentation of egg yolk. – Keeps the birds busy. – Provide vitamins and minerals. – Supplement feeding of birds. **(4 x ½ mark)**	**(2 marks)**
7.	**Signs of heat in rabbits** – Restlessness. – Swollen vulva. – Rubs against the wall and feed containers. – Throws itself on its sides. – Bends the tail over the back when mounted. **(4 x ½ mark)**	**(2 marks)**
8.	**Four maintenance practices of barbed wire fence.** – Tighten loose wire. – Splice broken wire. – Firm loose post. – Replace broken post and droppers. **(4 x ½ mark)**	**(2 marks)**
9.	**Four tick borne diseases of cattle.** – East coast fever. – Anaplasmosis. – Heart water/Babesia. – Red water/Babesia/Babesiasis **(4 x ½ mark)**	**(2 marks)**
10.	**Four reasons for feeding colostrum to a calf.** – It is highly digestible. – It is highly nutritious and contains vitamins for growth and disease resistance. – Has antibodies that enable the calf to resist diseases. – Cleaning the bowels of the calf/Laxative effect – It is highly palatable. **(4 x ½ mark)**	**(2 marks)**
11.	**Four ways of generating power on the farm.** – Hydro-electric. – Wind power. – Solar power. – Animal power. – Tractor engine/Generator – Electricity. – Biogas.	**(2 marks)**

	443/2 Marking Scheme	
	(4 x ½ mark)	
12.	**Four physical characteristics of merino sheep.** – Small body and angular in shape. – Drooping rump. – Narrow chest. – Flesh coloured muzzle. – White wool, hooves and horns. – Angular in Shape (4 x ½ mark)	(2 marks)
13.	**Signs of mastitis detected by a strip cup.** – Pus in milk. – Blood clots in milk/blood in milk. – Milk clot. – Watery milk. (4 x ½ mark)	(2 marks)
14.	**Four advantages of a two-stroke engine.** – They are not expensive (Cheap) to buy and maintain. – They are economical in fuel consumption. – Are used in a wide range of farming activities including hilly areas. – Can do small tasks within the farm. – Cheap to maintain/easy to maintain (4 x ½ mark)	(2 marks)
15.	– Rotary mower (Gyro-mower) – Reciprocating mower. (2 x 1 mark)	(2 mark)

SECTION B (20 marks)

	443/2 Marking Scheme	
16.	**(a) Identification of the parasite.** - Tick 1 x 1	(1 mark)
	(b) Three harmful effects of the parasite on livestock product. – Lower the value of hide. – Lower milk produce. – Loss of body weight. – Loss weight gain. 3 x 1	(3 marks)
	(c) Effective method of controlling the parasite. – Dipping. – Spraying with acaricides. – Applying pyre grease. 1 x 1	(1 mark)

17. (a)

(i) Identification of the livestock
Cattle/sheep/goat / Ruminants — 1 x 1 — **(1 mark)**

(ii) Reason for the answer
Four chambered stomach/ ~~ruminant~~. — 1 x 1 — **(1 mark)**

(b) Function of

E
- Act as temporary store of food. – Breaks down Carbohydrates and Cellulose to Carbon iv oxide, volatile Acids
- Food is fermented, condition necessary for microbial digestion. – Synthesis of ammonia acid from ammonia gas
- Absorption of ammonia gas and volatile fatty acids. – Breaks down Proteins to Peptides, ammino acids and ammonia gas

Synthesis of vitamin B-complex — 1 x 1 — **(1 mark)**

H
- Enzymatic digestion of protein.

1 x 1 — **(1 mark)**

(c) Structural difference.

F – It has comb like structure to sieve and separate fine from coarse food material.
G – Has many suspended parallel rough – surfaced leaves that lie on top of each other like pages of a book.

1 x 1 — **(1 mark)**

18. (a) Identify poultry rearing system.
- Deep litter

1 x 1 — **(1 mark)**

(b) (i) Two likely causes of the stress.
- Overcrowding.
- Inadequate feeders and ~~waterers~~.
- Mixing birds of different ages.
- Cannibalism.
- Inadequate waterers

– disease infestation – parasite infestation
– Handling of birds – lack of food
– Sudden change of feeds – lack of water
– Strangers & Predators in poultry house
– Sudden noise change
– Sudden weather

2 x 1 — **(2 marks)**

(ii) Two ways of controlling the stress.
- Rear birds according to age.
- Provide sufficient feeders and ~~waterers~~.
- Throw grains into the litter.
- Remove some chicken to overcome overcrowding.
- Provide sufficient waterers

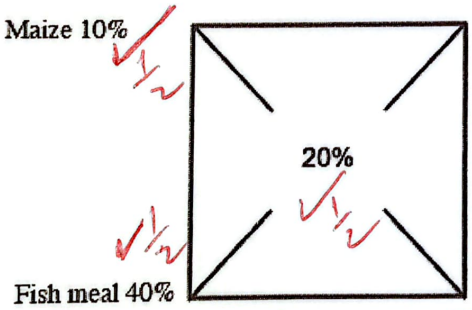
– Provide enough water
– Keep the poultry house quiet
– Insulate the poultry house
– Control disease – gradual change of routine
– Control parasite
– Keep off strangers

2 x 1 — **(2 marks)**

19. (a) Identification of the equipment.
J – Hypodermic needle and syringe — 1 x 1 — **(1 mark)**
K – ~~Troche and cannula~~ Trocar and Cannula. — 1 x 1 — **(1 mark)**

	443/2 Marking Scheme		
	(b) **One function of** **J** – Administering injections – Taking blood samples	1 x 1	**(1 mark)**
	(c) **Condition that require use of K.** – Bloat	1 x 1	**(1 mark)**
	(d) **One maintenance on K.** – Cleaning after use – Sterilising before use – Proper storage	1 x 1	**(1 mark)**

SECTION C (40 marks)

20.	(a)  =20 parts of maize =10 parts of Fish. 30 parts Maize $=^{20}/_{30}$ x 1000 = 666.7kg ✓¹ Fish meal $=^{10}/_{30}$ x 1000 = 333.3kg ✓¹	**5 marks**
	(b) **Five control measures of intermediate host of liver-fluke.** – Physically killing snails. – Adding chemicals to stagnant water to kill the snails. – Draining swampy areas. – Burning of infested pasture during the dry ~~decision~~ season. – ~~Not grazing animals near marshy areas.~~ – Biologically introducing predators of snails 5 x1	**(5 marks)**

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	(c) **Swine fever.** **(i) Causal organism** – Virus (Iridovirus).		
	(ii) Symptoms of attack – Rise in temperature. – Loss of appetite. – General weakness. – Coughing. – Nasal discharge. – Diarrhoea. – Depression	1 x 1 5 x 1	**(1 mark)** **(5 marks)**
	(iii) Control Measures – Vaccination. – Killing and disposing affected animals. – Prevent consumption of pig products from affected area/pandemic area. – Double fencing to keep wild animals away. – Quarantine.	4 x 1	**(4 marks)**
21.	(a) **Clean milk production essentials.** – Clean milking shed – free from dust and odours by locating it far from roads, piggeries etc. – Healthy milking herd, animals should be tested regularly for milk borne diseases and treated accordingly. – Clean milking herd – flanks and udder should be washed and dried using towel. – Long hair on the flanks and udder should be clipped off regularly to avoid milk contamination. – Healthy milk man – milk man should be free from diseases. – Clean milk man – milk man should be clean and with short finger nails and hair. Hair should also be covered not to fall into milk. – Clean milking utensils should be seamless and with fitted joints to facilitate cleaning / wash with clean hot soapy water rinse and sterilize. – Filtering milk – ~~milk should be kept in cold room to slow down bacteria multiplication~~. Remove solid impurities / hairs – Avoid flavours in milk, by avoiding feeds like Mexican marigold, onion etc. just before milking. Pineaple waste, silage Orange waste, Sweet potatoe vines, Kale Cabbages.	5 x 2	~~(10 marks)~~ 5x2=10 mrks

– Avoid direct exposure to Sun that may cause oxidation
– Avoid use of utensils made of copper or iron which may bring oxidation
– Cooling / Refrigeration to slow down bacterial multiplication
Proper Storage to avoid Multiplication.

- Can be used as a study or research tool
- Allows embryos to obtain passive immunities from surrogate mothers
- Saves cost of rearing a bull.

embryos are cheaper than animals of equal value.
Easy to plan for breeding
Prevent injury of cows by heavy bulls
Calf is borne in local surroundings hence minimises effects of climatic change.
Possible to screen & market sexed embryos to minimise number of male calves
- Control sexually transmitted diseases

	(b) **Five advantages of embryo transplant.** – Possible to implant embryo from high quality female to less valuable female to improve performance of offspring. – Stimulate milk production in a female that is not ready to produce milk. – Highly productive female characteristics can benefit many farmers. – It is easier to transport embryos in test tubes than whole animal. – Embryos can be stored for a long period – awaiting availability of a recipient females. 5 x 1	**(5 marks)**
	(c) **Ways of increasing digestibility in livestock nutrition** – Use of feed additives – Reducing the amount of lignin or cellulose in the feed material – Cutting the feedstuff into smaller particles – ~~Increasing~~ the ratio of energy (carbohydrate to protein) – Feeding the animals when they are hungry – Using feedstuff species with high digestibility. 5 x 1	**(5 marks)**
22.	(a) **Functions of five parts of a milking shed.** – Milking stall – where cow is milked. – Feed store – storing feed. – Calf pens – where calf is reared/fed with milk immediately after milking / provide feed. – Milk recording room – fitted with weighing balance and record board. – Milk store – provide cooler / cooling condition. 5 x 2	**(10 marks)**
	(b) (i) **Training of a calf to drink milk from a bucket.** – Put clean milk in a clean bucket. – Place index finger into the calf's ~~month~~. – As the calf start sucking lower the finger slowly until its submerged in milk. – ~~All~~ the calf to drink milk as it sucks the finger. – Slowly withdraw the fingers while calf is sucking. – ~~Reap~~ the process until calf learn to drink milk from a bucket. 5 x 1	**(5 marks)**
	(ii) **Five advantages of artificial calf rearing.** – Easy to keep accurate milk records. – Easy to regulate the amount of milk taken by a calf. – Cow continue to produce milk even in the absence of a calf. – Easy to maintain high standards of sanitation. – Likelihood of farmer to sell more milk. 5 x 1	**(5 marks)**

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MARKING SCHEME

THE KENYA NATIONAL EXAMINATIONS COUNCIL

KENYA CERTIFICATE OF SECONDARY EDUCATION

AGRICULTURE

PAPER 2

MARKING SCHEME
(CONFIDENTIAL)

THIS MARKING SCHEME IS THE PROPERTY OF THE KENYA NATIONAL EXAMINATIONS COUNCIL AND IT MUST BE RETURNED TO THE KENYA NATIONAL EXAMINATIONS COUNCIL AT THE END OF THE MARKING EXERCISE

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