FORM FOUR CLUSTER KCSE MODEL 3

AGRICULTURE PAPER 2 ANSWERS

SECTION A (30 Marks)

Answer ALL the questions in this section in the spaces provides

1. (i) Cattle.

(ii) Sheep.

(iii)Goats.

(iv) Poultry.

(v) Camels.

(vi) Rabbits.

(vii) Pigs.

2. (i) Ability to kill ticks.

(ii) Harvested to birth human beings and livestock.

(iii)Must be stable.

(iv) Should remain effective after being foiled with dung, mud or hair.

3. (i) Garden tools and Equipment.

(ii) Livestock Production Tools and Equipment.

(iii)Workshop Tools and Equipment.

(iv) Planting Tools and Equipment.

(v) Masonry Tools and Equipment.

4. (i) Micro –organisms synthesize vitamin B complex (B, B2 & B6) and vitamin K.

(ii) Synthesize of amino acids from ammonia gas.

(iii) Breakdown of proteins to peptides amino acids and ammonia.

(iv) Breakdown of carbohydrates and cellulose to carbon

(IV) oxide and volatile fatty acids (VFA)

5. (i) Equipment for administration must be sterilized.

(ii) Vaccines must be stored under freezing temperatures between negative 20 and negative 4 degrees Celsius.

(iii) Check expiry date before use.

(iv) Identify correct administration route e.g. intramuscular or intravenous.

(v) Observe correct dosage.

6. (i) Does not eat for sometimes/refers to eat.

(ii) Produces some grunting noise.

(iii) Monitoring other pigs and stand when mounted.

(iv) Vulva swells and reddens/clear slimy/discharge from vulva.

(v) Frequent urination.

(vi) Frequent urination.

7. (i) They are hardy and adapted to poor environmental conditions.

(ii) They mature early.

(iii) They do not require much forage due to size.

(iv) They do well under poor pasture conditions.

8. (i) Method of harvesting used.

(ii) Time of harvesting –day or night.

(iii) Maturity of honey at harvesting time.

(iv) Processing method used.

(v) Some of nectar.

9. (i) Tick control.

(ii) Frequency diagnosis.

(iii)Artificial Insemination (A.I)

(iv) Drenching.

(v) Putting Identification Marks.

(vi) Milking.

(vii) Dehorning.

(viii) Checking temperature.

(ix) Treatment.

(x) Hand spraying.

10. (i) Rubber ring with elastrator.

(ii) Sharp knife.

(iii)Hot Iron.

11. (i) Pollen grains.

(ii) Water.

(iii)Propolis.

(iv) Nectar.

12. (i) It can be moulded into any desired shape.

(ii) It is easy to clean.

(iii)It is odarable.

(iv) It is very strong.

(v) It is fire proof.

13. (i) Be oval shaped.

(ii) Be fertilized.

(iii)Have smooth shells.

(iv) Less than 10 days old.

(v) Be clean.

(vi) Be medium sized (55 g- 60 gm)

(vii) No candling abnormalities.

14. (i) Early weaning.

(ii) Late weaning.

15. (i) Breed.

(ii) Age of animal.

(iii)Condition of an animal.

(iv) Nutrition.

(v) Time of milking.

(vi) Disease incidence.

(vii) Season.

(viii) Stage of gestation.

16. (i) Availability of land.

(ii) Topography.

(iii)Capital available.

(iv) Security.

(v) Skills required.

(vi) Kind and amount of labour needed and availability. (vii) Availability of equipment required.

17. (i) Sigma supplies Ltd-Nairobi.

(ii) Western Hatcheries-Webuye.

(iii)Kenchic Hatcheries Kisumu, Nakuru, Kisii and Athi River.

(iv) Lake Chick Hatcheries –Kisumu.

(v) Muguku Hatcheries –Kikiuyu.

(vi) Rift Valley Hatcheries-Eldoret.

18. (i) Enhanced soil erosion.

(ii) Desertification.

(iii)Destruction of water towers/catchment areas.

SECTION B (20 Marks)

Answer ALL questions in this section in the spaces provided.

19. (a) Names of the parts labelled:

A. – overflow pipe/spillway.

B. – drain pipe/outlet.

C. – Inlet pipe. (½x3=1½mks)

(b) Grass is planted to prevent soil erosion and make the soil firm. (1x1=1mk)

(c)Three maintenance practices on the fish pond:

- Regular application of fertilizers, live and pesticides.

- Regular removal of weeds. - Repair and replacement damaged posts and fence.

- Maintaining correct water level in the pond all the time.

- Clean and remove foreign materials from the pond.

- Maintain grass on the walls to prevent erosion. (½x.3=1½mks)

(d)Two major reasons for variationin the depth of the pond floor.

- The fish pond has a shallow end (in deep) using for feeding fish and?

- The deep end (1.5 m deep) used by fish for breeding. (½x2=1mks)

20. (a) It is assuming that shape because the normal laying percentage increases from the point of

starting to lay up to the optimum age when birds are about 18 months old then starts to drop until they reach the cutting age of 75 weeks. (½x1=½mk)

(b) Two reasons leading to interruption of the laying percentages:

- Overcrowding in the laying house.

- Stress brought by being scared.

- Shortage of clean water and feeds.

- Parasite infestation and disease attack.

- Giving inferior feeds.

- Old age.

- Broodiness in layers. (½x2=1mks)

(c)(i) Laying percentage = No of eggs

No of hens

$$= \frac{65}{80} \times 100 = \frac{6500}{80}$$

$$= \frac{650}{8} \quad \surd\ (2½mks)$$

$$\approx 81.25\%$$

(ii) It would be uneconomical to keep birds at below 45% of laying.

21. (a) Identify tools labelled:

D -Jack plane.

E -Spoke shave.

F -Rasp. (½x3=1½mks)

(b) One situation where only tool F can be used:

- Where the wood has nails or iron spikes.

- Where timber has a lot of knots. (½x2=1mks)

(c) One use of tools.

- D - For smoothing timber as soon as it leaves the saw.

- E -For smoothing timber with iron

- F -For smoothening timber with iron spikes, nails or knots.

(d) One maintenance practice for each of the tools:

- D -Repair brocket handles/tighter loose screws.

- E -Replace broken/worn out parts, tighten loose nuts and screws.

- F -Remove sticking wood particles and clean to remove soil particle. (½x3=1½mks)

22. (a) (i) The parts labelled:

G -Isthmus.

H -Magnum.

I -Cloaca.

J -Infundibulum. (½x4=2mks)

(ii) The eggs longest in the uterus (18-22 hrs)

(b)(i) Fertilization –Infundibulum. (½mks

(ii) Shell and pigment deposition –Uterus. (½mks)

(iii) Addition of water, mineral salts and vitiations. -Isthmus. (½mks)

(c) The number of ova to be released before the layer is disposed of are 3,500 -4,000 (1x1=1mk)

SECTION C (40 Marks)

Answer any TWO questions from this section in the spaces provided after question 25

23. (a) Rearing of chicks from day old to end of brooding:

(i) Clean and disinfect the brooder before arrival of chicks.

(ii) Supply the chicks with clean water after their arrival and place it in shallow containers.

(iii)Always ensure that the brooder in dimly lit.

(iv) Place a footbath disinfectant at the door way.

(v) Provide coccidiostat in the chick's drinking water to prevent coccidiosis.

(vi) Antibiotics should also be mixed with water for prevention of bacterial diseases.

(vii) Vaccinate chicks against diseases accordingly.

(viii) Dust the chicks against external parasites.

(ix) Clean the feeders and waterers regularly.

(x) Keep the floor of the brooder always dry.

(xi) Debeak chicks to prevent cannibalism and toe pecking from 7-20 days before and of brooding.

(xii) Maintain the right temperature according to the ages of chicks using thermometer or

observation of behavior of chicks.

(xiii) Feed chicks on chick's mass up to six weeks old.

(xiv) Separate healthy chicks from unhealthy ones.

(xv) After the 6th week gradually introduce growers mash and once they get used to it, feed them

on this until 8th week when they are removed from the brooder.

(xvi) The sick chicks should be treated early to avoid spread of diseases.

(xvii) In case some chicks die, their carcasses should be disposed of properly.

(xviii) Keep accurate records.

(xix) Maintain proper ventilation. (1x10 marks)

(b) Advantages of live fences:

(i) They are cheap and easy to establish and cab ne planted in any area.

(ii) The theory species are effective in discouraging intruders e.g. Kei apple, cactus and Mauritius

thorn.

(iii) Tall varieties serve as windbreaks.

(iv) Some varieties provide fruits and leguminous species provide forage for livestock.

(v) Hedges provide aesthetic value to the farm.

(vi) Fences supply firewood and timber.

(vii) When leaves rot they improve structure and fertility of the soil.

(viii) Hedge pruning can be used to provide mulching material/material for compost manure.

(1x5=5mks)

(c) Embryo transplant. (E.T)

(i) The cost of importing embryos is much less than importing adult cattle.

(ii) Since the calf will be born in particular controlled environment, the bad effects of climatic changes will be minimized.

(iii) A calf produced from imported embryo will gain passive immunity to local diseases from nature recipient dam's colostrum hence it is protected until it can build its own immunity.

(iv) Embryo transplant can be used to block disease progression, overcome infertility and test for recessive genes.

(v) It is possible to in plant embryo from a high quality female to less valuable female hence improve performance of off springs.

(vi) Embryo transplant also stimulates milk production in female that was not ready to produce milk. (vii) By freezing embryos, it is possible to store them indefinitely and also bank valuable genetic stock of endangered species.

(viii) Embryo transplant has enabled cows to produce an average of 12-15 embryos per year.

(ix) Through E.T it is now possible to make sexed semen so that dairy farmers can get large female

(heifer) calves while beef farmers get larger bodied male calves from super ovulated donors to suit

market demand.

(x) Through ET, a single dam can have a far greater impact genetic improvement in a herd than

would normally be possible and usual generation internal of calf per year be overcome.

(xi) A highly productive female can be spread over a large area to benefit many farmers.

(xii) Embryos can be stored for long waiting availability of recipient female.1x5=5mks)

24. . (a) MILK FEVER

(i) Animal species attacked.

- Dairy cows ,dairy goats and sows (1x2=2mks)

(ii) Symptoms of attack

. - Staggering motion.

- Animals lying on sternum with neck twisted on one side.

- In ability to stand or recumbency.

- Difficulty in breathing.

- Drop in body temperature.

- Bodily functions stop e.g. defaecation, urination and milk production.

- Stomach contents are drawn to the mouth.

- There is complete loss of appetite.

- Animal falls flat and becomes unconscious. (½x 4=2 mks)

(b) Control and treatment.

(i) Regular provision of mineral licks.

(ii) Providing forage crops rich in minerals e.g. calcium and phosphorous.

(iii)Partial milking during the first ten days.

(iv) Mechanical removal of urine.

(v) Provide fresh water and nurse care.

(vi) Treat by intravenous injection with a dose of calcium borogluconate. (1x4=4mks)

(c) Dairy maintenance practices on a tractor:

(i) Check engine oil using a dip stick and top up.

(ii) Check level of fuel using fuel gauge and refill.

(iii) Check water level in the radiator and add more clean water.

(iv) Fan belt tension should be checked and adjusted as recommended.

(v) Loose nuts and bolts should be tightened.

(vi) Check level of electrolyte in the battery and top up if below the plates.

(vii) Check the terminals and fix them tightly then apply grease to avoid any coatings.

(viii) Check sediment bowl and remove large particles.

(ix) Check tyre pressure and adjust accordingly.

(x) Remove any trash blocking the fins in the radiator.

(xi) Grease moving parts. (1x8=8mks)

(c) Factors that would force a farmer to use hand tools instead of tractor drawn implements.

(i) Topography or terrain/when land is too steep.

(ii) Lack of skilled labour. (iii)Lack of capital to buy a hire tractor and implements.

(iv) When the land is too wet. (v) When land is too rocky or stony.

(vi) Availability of adequate time to use hand operation.

(vii) Size of the farm/small size (1x4=4 mks)

25. . (a) Harmful effects of parasite are livestock.

(i) They cause injury and damage to tissues and organs by biting and piercing.

(ii) They transmit diseases.

(iii) They cause mechanical obstruction or blockage of internal passages.

(iv) They facilitate entry of diseases –causing organisms by creating wounds.

(v) They inject toxins that can have adverse effects e.g. ticks saliva that cause Nairobi sheep disease.

(vi) They suck blood causing anaemia and irritation.

(vii) They compete with animals for nutrients leading to emaciation and reduced production.

(1x5=5 mks)

(b) Procedure used in clean milk production.

(i) Ensure that the milking shed is clean.

(ii) Ensure milk man is clean with short nails.

(iii) Restrain the cows in a crush/milking parlour.

(iv) Wash udder with clean warm water.

(v) Dry the udder with a clean towel/udder cloth.

(vi) Test for mastitis using strip cup.

(vii) Milking utensils should be clean and sterilized.

(viii) Milk using appropriate technique/hand or machine milking.

(ix) Milk the cows fast/within 5-8 minutes.

(x) Practice complete milking by squeezing.

(xi) Apply milking store.

(xii) Apply teat dip after milking.

(xiii) Release the cow.

(xiv) Weigh and record milk.

(xv) Sieve and over the milk.

(c) Maintenance practices on a Deep Litter Poultry House.

(i) Improving drainage around the house.

(ii) Painting or treating wooden parts.

(iii)Maintain level of concentration of footbath.

(iv) Repair and replace broken parts.

(v) Regular clearing and removal of cobwebs.

(vi) Regular turning or changing of litter.

(vii) Lubricating door hinges.

(viii) Fumigating and dusting /spraying against parasites. (1x7= 7 mks)