

FORM FOUR JOINT EVALUATION - 2017

Kenya Certificate of Secondary Education (K.C.S.E).

443/2

AGRICULTURE

PAPER 2

MARCH-2017.

TIME: 2 HOURS

MARKING SCHEME

SECTION A

1. Routes of pathogens
 - Mouth
 - Nose
 - Eyes
 - Anus
 - Ears
 - Navel / Umbilical cord
 - Genital / reproductive organs

(First 4x ½ =2mks)
2. Duties of a worker bee
 - To feed the aneen drones and brooden
 - To collect nectar, pollen gum and water
 - To clean the hive
 - To make honey and bees wax
 - To guard / defend the hive against intruders.
 - To build combs
 - To seal cracks and crevices in hives with propolis / wax
 - To control the temperature of the hive

(First 4 x ½ = 2mks)
3. (i) Large white
(ii) Charolais
(iii) Angora goat
(iv) Corriedale

(4x ½ = 2mks)

4. Signs of heat in sows.
 - Frequent urination
 - Clear / colourless / slimy mucus discharge from the vulva.
 - Vulva swells and becomes reddish
 - Tendency to mount on others and accepting to be mounted upon
 - Stands still when pressure is applied on her back.

(First 4 x ½ = 2mks)
5. Tools used for hoof trimming
 - Hoof trimmer / foot trimming knife/ trimming knife
 - Hoof cutter / sharp knife

(2x1=2mks)
6. Precautions in seasoning timber
 - provide roofed shade to keep off direct sunshine or rain
 - Stack timber in heaps supported off the ground to allow free air circulation.
 - Separated the timber using wooden rods (sticks) to allow passage of air.
 - Keep the support and rods close to avoid sliding and bending

(3 x ½ = 1 ½ mks)

7. Reasons for raddling
- To identify the ram that has served the ewe.
 - To show fertile animals
 - To identify the ewes that have been served.
- (First 2x ½ = 1mk)
8. Methods of selection
- Mass selection
 - Progeny testing
 - Contemporary comparison.
- (3x ½ = 1 ½ mks)
9. Breeding systems
- Close breeding
 - Line breeding
- (2x ½ = 1mk)
10. Stocking in a fish pond
- Fertility of the pond
 - Addition of artificial feeds
 - Type of fish in the pond
 - Frequency of harvesting
 - Method of harvesting
- (First 4 x ½ = 2mks)
11. Depreciation of Equipments
- Age of the farm equipment
 - Intensity of use of the equipment
 - Manufactural materials of the equipment
 - Maintenance of the farm equipment
 - Field / existing conditions where it is used.
- (4x ½ = 2mks)
12. Reasons for dehorning
- To avoid inquiries to the farmer and other animals / hide
 - To make animals docile and easy to handle
 - For economical use of space when either transporting or feeding
 - To avoid destruction of farm structures
 - To make animals look better.
- (first 4 x ½ =2mks)
13. Qualities of a good ration
- Should be balanced in terms of nutrients
 - Should be palatable to the animal
 - Should be highly digestible
 - Free from the contaminants
 - Free from poisonous substances
- (First 2 x ½ =1mk)
14. Livestock diseases caused by viruses
- Food and mouth disease
 - rinder pest
 - Rabies
 - Rift valley fever
 - New castle
 - Gumboro disease of poultry
 - Swine influenza
 - Marek's disease/ fowl paralysis
- (First 4 x ½ = 2mks)

15. (a) a roughage is a feed stuff with high fibre content and a low energy content while a concentrate is a feed stuff with high protein and / or energy content and low in crude fibre content (marked as a whole)
- (b) Qualities of a creep feed
- It is palatable
 - Highly digestible
 - It is attractive to piglets
- (½ x 2 = 1mk)

16. Maintenance services on a tractor
- Check the tyre pressure and adjust accordingly
 - Check the level of electrolyte
 - Check the oil level with a dipstick
 - Check the water level in the radiator and add if low
 - Tighten bolts and nuts if loose
 - Remove trash from the machine.

(First 4 x ½ = 2mks)

17. Preventive measures for bloat
- Giving hay before releasing animals to fresh pasture
 - Giving fairly wilted grasses after cutting
 - Spraying pasture with vegetable oil or liquid paraffin before grazing animals in the field
 - Animals should be taken for grazing after the dew has cleared from vegetation
- (½ x 2=1mk)

18. Management practices in a crush
- Hand dressing
 - drenching / deworming / dosing against internal parasites
 - Vaccination
 - Identification i.e branding
 - Pregnancy diagnosis
 - Artificial insemination (AI)
 - Milking
 - Dehorning
 - Collection of semen
 - Taking body temperature
 - Hoof trimming

(First 4x ½ = 2mks)

SECTION B (20 marks)

19. (a) Head retraction in chicks
- (b) Manganese deficiency
- (c) - Sterility in birds / delay in sexual maturity
- Reduced hatchability
 - Reduced shell thickness
 - Irregular ovulation
- (First 2x1=2mks)
- (d) - Activates enzymes
- Used in metabolism to carbohydrates
 - Used in metabolism of proteins and fats

(1x1=1mk)

20. (i) 1 - Piston
- 2 - Crankshaft
- 3 - Propeller shaft
- 4 - Differential

(4x1 = 4mks)

- (ii) Hitching

(1x1=1mk)

21. A – Chicks are crowding around the heat source because the temperatures are low.
 B – Chicks move farther away from the heat source because the temperatures are high.
 C – Chicks are evenly distributed within the brooder because the temperatures are favourable.
 D – Chicks move towards one side because the temperatures on the side of the brooder are unfavourable due to effect of drought.

(4 x1 =4mks)

Requirements of a brooder

- Should be well aerated and warm
- Should have enough feeders and waterers
- Should be spacious enough
- Should be clean
- Should be properly drained

(1x 1 =1mks)

22. (a) D – Rafter
 E – crosstie
 F – Purlin
 G – gutter

(4x 1 =4mks)

- (b) - To support roofing materials
 - To ensure that roofing materials are firmly held after nailing unto the iron sheets.

(1 x 1 = 1mk)

SECTION C (40 Marks)

23. (a) - For fast growth rate and maturity
 - For longer economic and productive lie
 - For maximum production or performance
 - For good quality products
 - To reduce spread of diseases to man and other animals.
 - Health animals are economical and easy to keep.
 - To reduce the cost of production

(7x1=7mks)

- (b) - Cause anaemia
 - Deprive the host animal of its food
 - Damage tissues and organs
 - Disease transmission
 - Cause irritation
 - Obstruct internal organs

(5x1=5mks)

- (c) Farrowing pen – For farrowing and releasing piglets
 Boar's pen – Houses the boar and used for mating
 Gilt's pen - Houses young females / gilts upto service age / 12 months
 In-pig pen - Houses pregnant pigs before they are moved to the farrowing pen.

(4x2 = 8mks)

24. (a) (i) Wear protective clothings like overalls, veil, gumboots and carry beehive tool and insecticide for emergency and appropriate containers and smoke.
 (ii) Approach the beehive early in the morning or late in the evening from behind
 (iii) Work the smoker and apply smoke into the hive through entrance to make bees less active.

- (iv) Remove the top lid and check each comb in turn and scrub the bees and cut the honey combs.
- (v) Place the honey combs in a rust roof container.
- (vi) Replace back the bars and the lid to original position

(5x1=5mks)

- (b) - Age
- Poor health
- Physical deformities
- Hereditary defects
- Low libido
- To avoid inbreeding

(5x1=5mks)

- (c) (i) - Over crowding
- Sudden change of routine operations
- Sudden loud noise
- Sudden change in weather conditions
- Presence of strangers
- Parasite infestation
- Poor feeding / unbalanced diet
- Introduction of new birds
- Rough handling

(First 5x1=5mks)

- (ii) - make laying boxes / nests dark / dim
- Provide adequate floor space
- Feed birds on adequate balanced diet
- Feed birds according to age groups
- control external parasites
- hang greens in the poultry house
- Debeak perpetual cannibals
- Cull perpetual cannibals.

(First 5x1=5mks)

25. (a) - Locate the area to be fenced off.
- Measure the area and determine the amount of material needed.
 - Mark out the fencing posts and locate the gates.
 - Dig the holes using auger to a depth of 0.6m deep or appropriate depth.
 - Put the poles / posts in the holes and align them using a string making sure the fence is straight.
 - Reinforce the poles / post with concrete or affirm the soil all around them till they are firm.
 - Lay out the barbed wire leaving a space of 24-36cm between each wire line although this can vary.
 - Drive in the staples or fencing nails
 - Brace the corner and gate posts securely to ensure proper wire tension
 - Use wire strainer to tighten the wire
 - Install the gates

(10x1=10mks)

- (b) - The sow is put in a furrowing pen with creep area set a side for piglets
- When piglets are born ensure they are able to breath.
- Cut and disinfect the naval cord using iodine solution
- Put the piglets in the creep area which has warm litter and possibly a source of heat to prevent chilling.
- Ensure the piglets suckle the sow
- Administer iron infection to prevent anaemia
- Provide creep feed to piglets adlibitum / to satisfaction

- Provide clean water
- Weigh the piglets to determine birth weight.
- Provide piglet pellets as from the third day after birth.
- Weigh the piglets after 18th day and possibly weekly to determine growth rates.
- Remove the milk teeth / canine teeth to prevent injury to the sow's tidder which can lead to mastitis disease.
- Ensure cleanliness in the creep area
- Control external parasites by use of appropriate pesticide.
- Gradually introduce the piglets to other feeds and wear them at 8 weeks after birth.

(10x1=10mks)