FORM 4 PAPER 2

AGRICULTURE MARKING SCHEME

TERM 2 2019

MARKING SCHEME

SECTION A

1)Beef cattle breeds reared in Kenya

* Aberdeen Angus
* Galloway
* Hereford
* Beef short horns
* Charolains 2x ½ = 1mk

2)Breed of dairy animal

- Guernsey. ½ mk

3)Tuso diseases transmitted by brown ear tick.

* East coast fever
* Anaplasmosis
* Naitrobi sheep diseases. ½ x2 = 1mk

4)Two species of tapeworms found to livestock

i) Talaiva Saginata

ii) Taenia Solium 2 x ½ = 1mk

5)Four factors considered when formulating livestock ration.

* Body weight/ size
* Available feeds
* Cost of feeds
* Nutrient composition of feeds available
* -Ingredient required in the ration
* Animals level of production
* Age/stage of growth
* Type of production 4x1/2 =2mks

6)Cause of grass tetany

- Deficiency/low level of magnesium in animal blood plasma 1 x ½ = ½ mk

7)Precautions taken by farmers to prevent piglet anaemia

* Injection with iron salt solution
* Giving iron paste
* Providing clean sterilized soil rich in iron. 2 x ½ = 1mk

8)Breeding system:- upgrading/grading up ½ mk

9)Disadvantages of embroye transplant

* Expervia
* Requires highly skilled labour
* Requires special equipment for fertilization and storage
* If the uterus of the animals to receive the embryo is not ready implantation will not occur. 3x1/2 = 1 ½ mks

10)Four causes of sterility in dairy cows:-

* Nutrient deficiency
* Damaged uterus
* Retained placenta
* Blocked fallopian tubes
* Disease of reproductive organs. 4x ½ = 2mks

11)Signs that would indicate a cow has died of anthrax:

* Absence of rigor mortis/no stiffness
* Dark waterly blood oozing from natural openings.
* Excessively blown stomach
* Blood does not clot. 2 x ½ = 1mk

12)Four pre-milking activities:

* Assemble utensils
* Restrain the cow
* Provide cow with feed
* Wash udder with warm water
* Dry udder with clear towel
* Test for mastitis

13)Signs of broodiness in poultry:

* Continuous staying of the hen the laying nest after laying.
* Hen stop laying
* Hen becomes aggressive
* Hen plucks off her feathers which she uses in incubation nest. 4 x ½ = 2mks

14)Functions of worker bees:

* Feed the queen, drones and brood(young bees)
* Protect the hive from intruders
* Collect nector, pollen, trees resins, gums, water
* Build combs and seal the cracks and crevices in the hive.
* Clean the hive.
* Make honey ad bees wax. 4x1/2 = 2mks

15)Demerite of live fences:

* Thorns may injure livestock
* Take long to establish
* Occupy large area/space
* Rodents and thieves may hide in them. ½ x 4 = 2mks

16)Advantages of raddling:

* To identify the size of the lamb
* To identify barren ewes
* To identify the infertile rams
* To identify the most fertile ewes

17)Developmental stages of a liver fluke:

1. Sporocyt
2. Cercaria
3. Radiae 2 x ½ = 1mk

18)Four farm structures for hanling dairy animal’s:

* Crush
* Fence
* Milking shed
* Cattle shed
* Calf pen
* Stall
* Night bomas. 4 x ½ = 2mks

19)Maintenance practices of a mould board plough:-

* Clean after use
* Tighten loose nuts and bolts
* If not in use store in a shed(reject shade)
* Coat metallic parts with old engine oil to prevent rusting.
* Replace broken share
* Sharpen blunt share. 4 x ½ = 2mks

20)Functions of lubrication system:

* Increase efficiency of the machine and reduce the rate of wear and tear.
* Reduce heat created by rubbing surfaces
* Act as cleaning agent of dust/dirt.
* Prevent rusting of stationary machines. 3 x ½ = 1 ½

21)Notifiable diseases:

* Anthrax
* Rinderpest
* Mad cow disease
* Black quarter
* Foot and mouth
* Lumpy skin
* Rabies. 3x ½ = 1 ½ mks

SECTION B

22a)Implement

* A sub- soiler. 1mk

Bv)Advantages of using the implement

* Preferred in cultivation of compacted soil.
* Used to break up hard pans. 2x 1 = 2mks

23a)The workshop tools are:

M- Marking gauge

N- Mortise gauge. 2 x ½ = 1mk

b)Tool M is used for marking one line parallel to the true edge of the stock in wood work to indicate cutting line while tool N is used for marking two lines parallel to each other and also to the true edge of the stock. 1x1 1mk

24a)Structure – spray race. 1mk

b) A – side walls

 B –spray pipe system. 2 x ½ = 1mk

c)Functions of:

1. Provide support to the piping system/ ensure spray wash is directed back to the pump through the drainage pipe.
2. Fitted with nozzles which atomize the chemical into spray form. 2x 1?2 = 1mk
3. Advantages of the structure:

Suitable for sick/pregnant animals/calves

Chemicals are not wasted

Animals cannot swallow the acaricide

Spraying is faster

Less labour is required. 4 x ½ = 2mks

25

1. Type of bee hive
* African log hive. 1mk

ii)Parts labeled

1. Entrance holes
2. Suspending wire. 1x2 = 2mks

ii)Advantages of using KTBH

* Easier to construct
* Cheap to construct
* Harvested honey is free from contamination.
* Top bars can be removed for inspection of combs and be replaced without problems.
* More wax and honey is harvested
* Honey combs can be removed without causing destruction to the brood. 4x1/2 = 2mks

26a)

 Maize 6%

 46 parts of maize

 18%

 Fish meal 64% 12 parts of fish meal

 58 Total parts

Amount of maize meal = 46 x 200kg = 158.6 kg

 58

Amount of Fish meal = 12 x 200kg = 41.4 kg

 58 4mks

b) Two other feeds added to the chickmash

 - Vitamin - Minerals ½ x 2 = 1mk

SECTION C

27a)Characteristic of effective acaricides

* are able to kill ticks
* Are safe to use
* Are stable or have along storage life
* Effective after mixing with dirty, mud or hair. 4x1 = 4mks

b)Methods of applying acaricides

- Spraying

- Dipping

- Hand- dressing. 3 x 1 = 3mks

c)Causes of swarming in bees:

* Over crowding
* Shortage of food and water in their surrounding
* Sick or infertile queen
* Dampness and bad smells
* Lack of adequate ventrilation
* Damage of brood combs
* Outbreak of diseases and parasites. 6x1 = 6mks

d)Differences between diesel and petrol engine:

|  |  |
| --- | --- |
| Petrol Engine | Diesels Engine |
| 1.Has a carburetor | -Has injection pump |
| 2.Fuel and air are mixed | -Fuel & air are mixed within the carburetor cylinder. |
|  |  |
| 3.Fuel i.e ignited by electric | -Fuel is ignited by compression of air & fuel mixture in the cylinder |
| 4.. Produces little smoke | - A lot of smoke |
| 5. Light in weight | - Heavy in weight |
| 6. Suited for light duties | -Suited for heavy duties |
| 7. Produces less power | - produces more power |
| 8. Uses petrol | - Uses diesel |

 7x1 = 7mks

28a)Digestive system of poultry:

1. Crop –Temporary storage of food
2. Moistening food with water. 1x2 = 2mks

ii)Proventriculus

-Productioon of pepsin enzyme. 1x1 = 1mk

iii)Gizzard – Tough muscles that slide

* Contain Grit/sand the birds pick the soil
* - Crush / grind food into paste. 3x1 = 3mks

iv)Duodeum

* Pancreatic amylase-convert starch to maltose
* Lipase enzyme – convert lipids to fatty acids and glycerol
* Trypein- converts protein to peptones and peptides. 3x1 = 3mks

v)Caecum- Microbial digestion of cellulose

- Absorbs water and by product of micr0-bial digestion. 1x1 = 1mk

b)Procedure of constructing a barbed wire fence:

* Clear 2m wide of the fence line off the vegetation- use a string to lay out the fence line.
* Use of tape measure to determine and mark inners post distances with pegs.
* Determine position of gates, dig holes for the posts 4-6m apart and 60m deep for standard post/intermediate posts and 75-90cm for corner posts and gate posts using a soil auger.
* Put concrete at the bottom of the hole and place the posts vertically upright.
* Fill the hole with a mixture of concrete at a ratio of 1:3:5, put soil and stones into the hole and firm the base.
* Fix the lowest strand of wire about 25cm from the ground level using fencing staples, stretch the wire with the wire strainer and then nail l it with fencing staple.
* Use the first strand of wire to guide in fixing the rest of the wire until four of the strand are fixed. Reinforce wire strand with dropper/strainer between any two post then fix the gate. (steps must be followed) 5x1= 5mks

c)Advantages of farm mechanization:

-Farm operations can be achieved on time/saves time.

- Large area can be covered without a short time.

- Makes work easier and enjoyable.

- Increased efficiency/better work done.

- High yields are obtained since farm operation are carried out on time.

 -Use less labour.

- Farmers benefit from economics of scale.

-Encourage farmers to consolidate their land.

-Pest and disease outbreak can be controlled in relatively short time.

-

29a)i)causal organism- Coccidila/protozoan. 1mk

ii)Livestock species attacked- poutry, calves, young rabbits, keds,lambs. 2x1= 2mks

iii)Symptoms of attack

-Diarrhea

-Dysentry or blood in the dung

 Emmaciation

Ruffled feathers

-Dull with dropping wings.

-Sudden death in birds. 4x1 = 4mks

iv)Control measures:-

* Drugs like Coccidiostats mixed with food and water.
* Isolation of injected animals
* Avoid common drinking points for livestock from different farms.
* Avoid overcrowding. 3x1 = 3mks
* Avoid filth,unhygienic animal surroundings

b) Advantages of artificial insemination:

- Semen of one superior bull can be used to serve many cows.

- Controls transmission of breeding diseases and parasites.

-Prevents large bulls from injuring small cows.

-Reduces expenses of rearing a bull

- Semen can be stored for a long time even after death of a bull.

- Easier to control breeding

- Eliminate dangerous bulls from the farm

-Sires that are unable to serve. Cows due to heavy weight or injury can produce semen 1x5= 5mks

c) Economic importance of parasites

- They rob heat animals off feed, nutrients leading to poor health

- Blood sucking causes anaemia

-Damage the skin/hides lowering their market value.

-Causes wounds creating routes for secondary injections.

-Some like round worms cause blockage include alimentary canal leading to constipation and death.

-Some e.g ticks cause irritation..

-Some are disease vectors.

-Cause abnormal growths in body tissues which they feed on.

-Excrete toxic substances which cause digestive problems to the host.

- Caucasus of host animal killed for meat are usually condemned as unfit for human consumption e.g bladder worms in beef and pork. 5x1 = 5mks

30a)Advantages of Battery cage system:

* Eggs produced remain clean.
* Broodiness is discouraged.
* High stocking rate.
* Food and water are not contaminated.
* Vices like cannibalism and egg eating are reduced.
* Individual records of egg laying can be kept.
* More eggs are produced per bird.
* The system requires low labour.
* Easy to clean and disinfect
* Sick birds are easily identififed and treated.
* Feeding and watering can be mechanized
* Different classes/ages of birds can be kept.
* Less spread of diseases and parasites from a bird to others
* Easy to handle birds during routine practices.
* Culled birds have tender meat. 10x 1 = 10mks

**b)Operational differences between a disc and mould**

board plough

|  |  |
| --- | --- |
| Disc Plough | Mould board plough |
| -It can be used on a field with obstacles such as stones, roots and stumps because of the rolling action of the disc | -It rigid and slides along in operation -Cannot be used on fields with hard soil stones etc. |
| -Does not invert furrow slices- leaves a rough field | -Invents furrow slice –leaving a clean field. |
| -Most secondary operations are necessary | -Few secondary operations |
| -Costs at varying depths and :- rides over obstacles. | -Operates on uniform depth. |
| -Not easily broken by obstacles because it rides over them. | -Its rigid:-can easily be broken by obstacles. |
| -Requires less power to pull when operating. | -Requires more tractor power to pull when operating. |
|  |  5x2 = 10mks |