**Name: …………………………………………………………… Index No …......…................................**

**Candidate’s Sign …………………………………. Date: …………………………………**

443/2

**AGRICULTURE**

Paper 2

OCT/NOV 2017

**Time: 2 Hours**

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

**Agriculture**

**Paper 2**

**2 Hours**

**INSTRUCTIONS TO CANDIDATES:**

* *Write* ***your******name****,* ***index number*** *and* ***school*** *in the spaces provided.*
* *Sign and write the date of the examination in the spaces provided.*
* *This paper consists of* ***three*** *sections;* ***A, B*** *and* ***C.***
* *Answer* ***all*** *questions in section* ***A*** *and* ***B.***
* *In section* ***C*** *answer any* ***two*** *questions in the spaces provided*
* *All answers* ***must*** *be written in the spaces provided.*

**For Examiner’s Use Only;**

|  |  |  |  |
| --- | --- | --- | --- |
| **SECTION** | **QUESTION** | **MAXIMUM SCORE** | **CANDIDATES’ SCORE** |
| **A** | 1 - 20 | 30 |  |
| **B** | 16 – 19 | 20 |  |
| **C** |  | 20 |  |
| 20 |  |
|  | **Total** | **90** |  |

*This paper consists of 8 printed pages. Candidates should check the question paper to ascertain that all pages are printed as indicated and that no questions are missing*

**SECTION A (30 MARKS)**

***Answer all the questions in this section in the spaces provided.***

1. What characteristics of gizzard of a cork enable it to digest food? (1mk)

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2. Differentiate between an essex saddle back and Wessex saddle back (1mk)

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3. State four factors that determine quality of honey (2mks)

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4. (a) Give fours ways of restoring a sick animal to good health (2mks)

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(b) Differentiate between pen and daft camping in sheep management (2mks)

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5. What the difference between making gauge and mortise gauge (1mk)

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6. Give two examples of light breeds of poulrty (1mk)

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…………………………………………………………………………………………………………..

7. (a) State four signs of heat in pigs (2mks)

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(b) Give two reasons why teaser rams are introduced to a flock of ewes some weeks before tupping (1mk)

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8. Name two livestock diseases controlled through artificial insemination (1mk)

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…………………………………………………………………………………………………………..

9. State two factors which determine amount of feeds given to an animal (1mk)

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…………………………………………………………………………………………………………..

10. Name the tool used together with each of the following tools

(a) Canula

…………………………………………………………………………………………………………..

(b) Brace

…………………………………………………………………………………………………………..

(c) Elastrator

…………………………………………………………………………………………………………..

11. Name four plumbing tools used for installing galvanized water pipes (2mks)

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12. Give two reasons for seasoning timber before it is used for construction (1mk)

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13. State two factors that lower quality of concrete (1mk)

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14. Give two maintenance practices in a green house (1mk)

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15. Highlight three functions of ventilation in an animal house (1 ½ mks)

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16. Name the type of breeding system represented below

(a) Ayrshire sue x Boran Dam F1 heifer x Hereford ( ½ mk)

…………………………………………………………………………………………………………..

(b) Outline two characteristics of livestock that are used in mass selection (1mk)

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17 (a) Name four properties of a good vaccine (2mks)

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(b) What is the function of spillway in a fish pond? (1mk)

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**SECTION B (20MARKS)**

***Answer all the questions in the spaces provided***

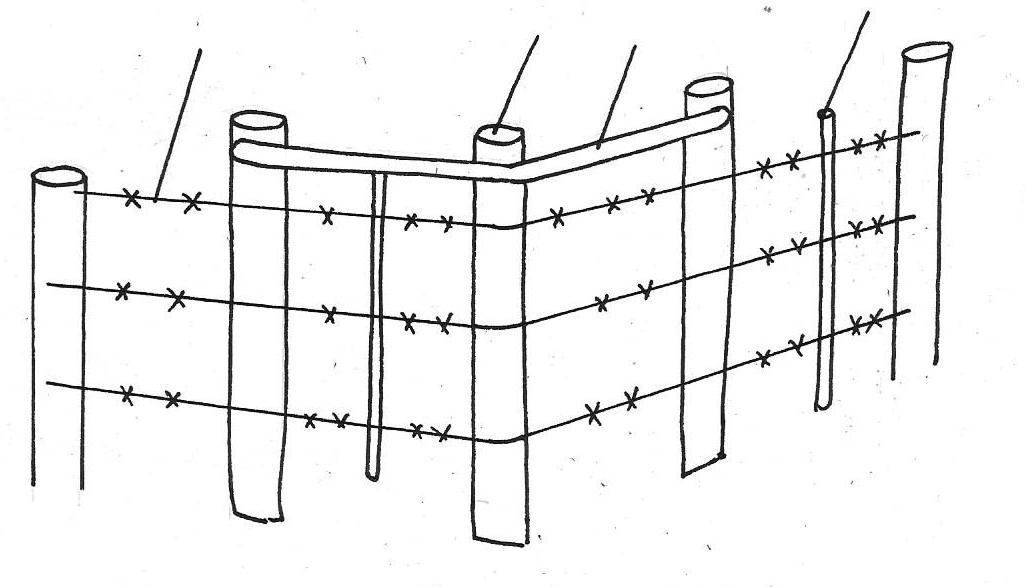
18. Below is a diagram of a farm structure it to answer the questions that follow

**A**

**B**

**C**

**D**



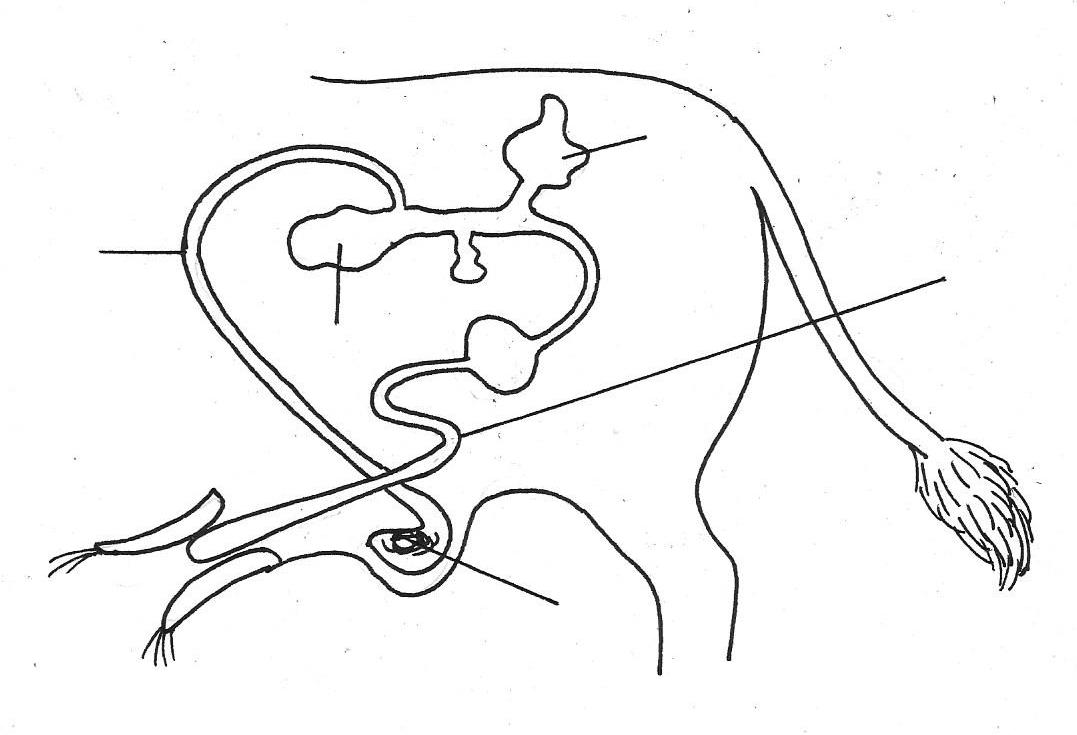
(a) Identify the structure ( ½ mk)

…………………………………………………………………………………………………………..

(b) Name the parts labeled B,C,D,E and F (2 ½ mks)

…………………………………………………………………………………………………………..

…………………………………………………………………………………………………………..

19. Study the illustration below and use to to answer the questions below

**Urethra**

**A**

**C**

**D**

**B**

(a) Label the parts

A…………………….

B……………………..

C……………………

D…………………

(b) Give the functions of parts B and C (2mks)

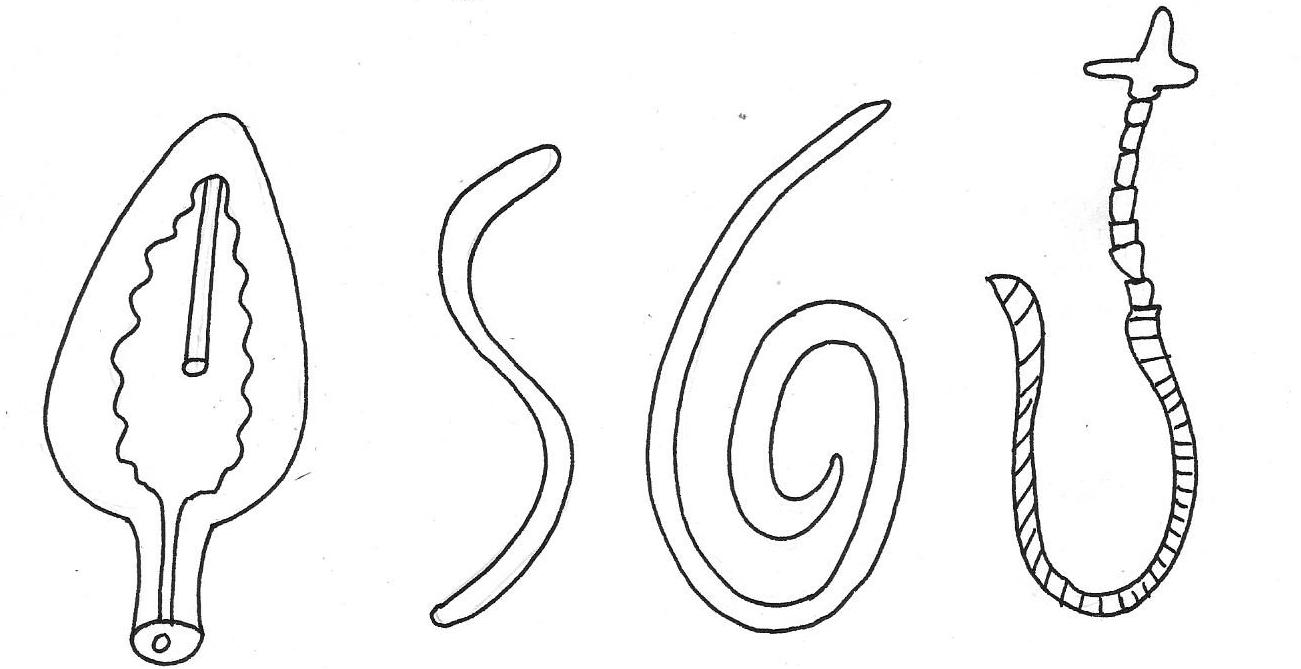
B……………………………………………………………………………………………….

C…………………………………………………………………………………………………

(c) Give the name of the part in the animal affected when the animal is attacked by brucellosis(1mk)

…………………………………………………………………………………………………………..

20. Diagram G,H and J illustrate some livestock parasites



**G**

**H**

**J**

(a) Identify parasites G,H and J ( 1 ½ mks)

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(b) State the category of parasites G, H and J (1 ½ mks)

…………………………………………………………………………………………………………..

…………………………………………………………………………………………………………..

(c) Name the parts of the hosts body where parasites G and J are found (2mks)

…………………………………………………………………………………………………………..

(d) Name the intermediate horsts of parasites G and H (1mk)

…………………………………………………………………………………………………………..

21. Below is a breeding cycle of an ewe in relation to feeding region accompanying it it.

TUPPING

LAMBING

WEANING

iii

i

ii

(a) Which stages are represented by:-

(i) ……………………………………

(ii)…………………………………….

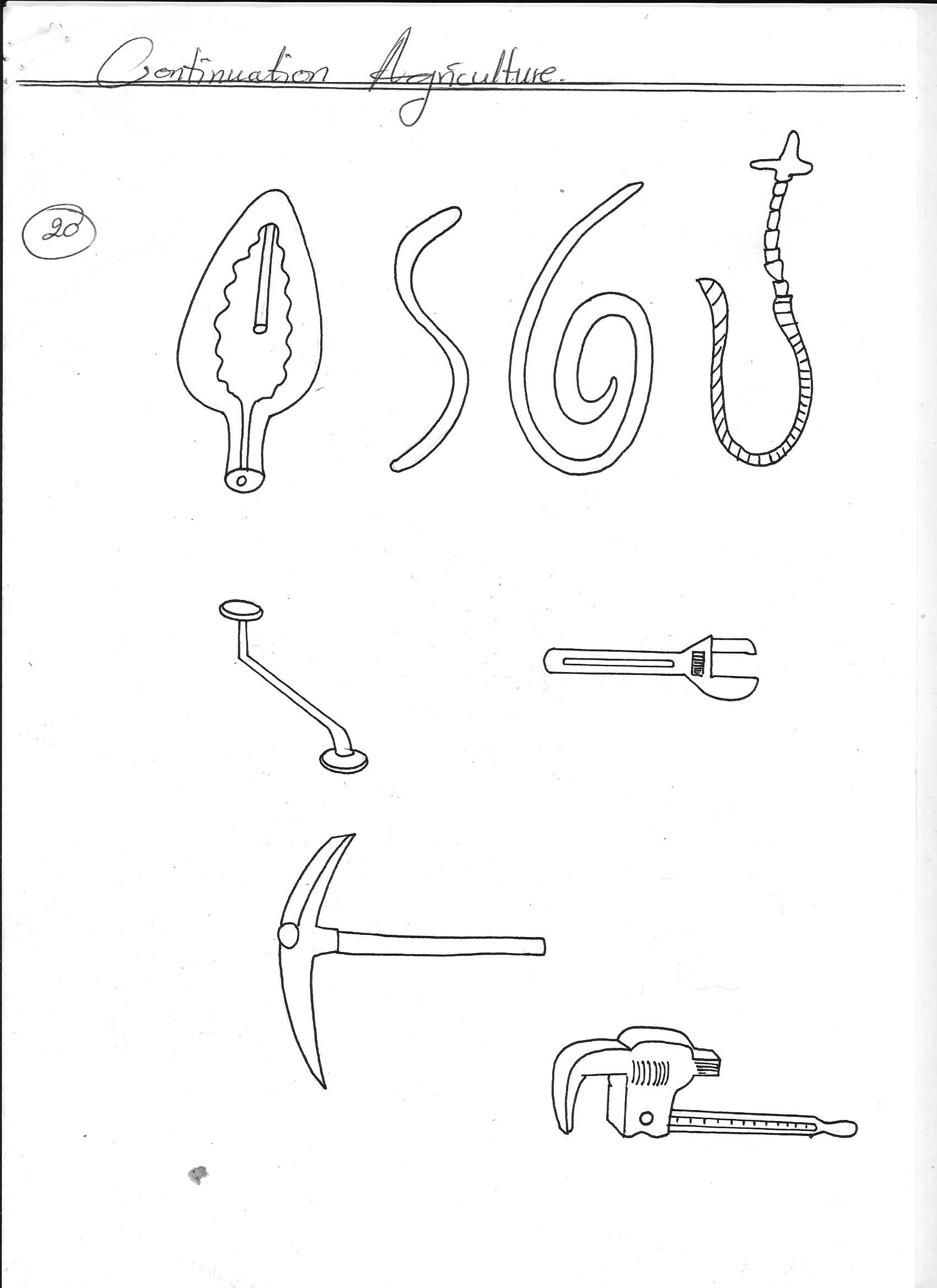
(iii)…………………………………….

(b) Give two importance of (i) (2mks)

…………………………………………………………………………………………………………..

…………………………………………………………………………………………………………..

22. Below are farm tools, study them and answer the questions below



**O**

**N**

**M**

**L**

(a) Identify the tools M, N (1mk)

M …………………………………………………………………………………………………………..

N …………………………………………………………………………………………………………..

**(b)** Give one functional advantage of O over tool L (1mk)

…………………………………………………………………………………………………………..

**SECTION C: (40MARKS)**

***Answer TWO questions from this section.***

23. (a)Describe five design requirement of a calf pen (10mks)

(b) Describe milk fever disease under the following sub-headings

(i) Animals affected (2mks)

(ii) Symptoms (5mks)

(iii) Control and treatment (3mks)

24. Give the routine practices and explain an appropriate method of handling livestock during the routine practice (20mks)

25. (a) Describe the digestion of grass in the rumen of a ruminant (6mks)

(b) Describe the life-cycle of a three host tick (7mks)

(c) Which precautions should be observed when using farm tools and equipment (6mks)

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**BUTERE EAST DISTRICT JOINT EXAMS**

**AGRICULTURE 443/2**

**MARKING SCHEME**

**OCT/NOV 2013**

1 .(a) Contains grit for grinding food

Has tough muscles on each side to enable crushing of food into powder/smaller particles (2x ½ =1mk)

(b) Essex has black body with shoulders and all four legs white while wessex saddle back has a black body with shoulders and only the front legs white (1 mk as a whole)

2. Reduced growth rate

Anaemia

Blockage of intestines

Diarrhoea

Loss of weight

Presence of worms in fieces

Malnourishment

Pot bellies

Coughing as larvae migrate from the lungs to the trachea ( ½ x5= 2 ½ msk)

***3. Factors that influence quality of honey***

Presence of impurities

Source of nector/type of flowers

Season of the year the honey is harvested

Oversmocking during harvesting which give honey bad smell

Method of harvesting

Method of processing the flowers ( ½ x4= 2mks)

***4 (a) Ways of restoring a sick animal to good health***

Good feeding

Provision of clean environment

Provision of clean environment

Neutralizing the ill effects produced by the disease

Relieving discomfort on injury to the animals

Preventing further spread of the disease.

***(b) Pen and drift lambing***

Lambing-process where the pregnant ewes are separated from the others after showing signs of lambing while drift lambing is where pregnant ewes are put together in one paddock and separated as they lamb down.

***5. Difference between marking gauge and mortise gauge***

***6. Light breeds of poultry***

Leghorns, Minorca, Ancona, Sykes ( 2 x ½ =1mk)

***7 (a) Signs of heat in pigs***

Restlessness

Frequent urination

Swelling and reddening of vulva

Respond positively to riding test

Frequent mounting on others

Clear/shiny mucus from the vulva

***(b) Reasons why teaser rams are introduced***

Stimulates ewes to be on heat

Helps in detection of ewes that are on heat/oestrus

Helps in determining the most appropriate time for tupping (2x ½ =1mk)

8. Vaginitis

Orchitis

Brucellosis/contagious abortion (2x ½ =1mk)

***9. Factors which determine amount of feeds***

Level of production of the animal

Activity performed by the animal

Age of the animal

Body weight/body size

Type /species of th e animal

Weather conditions /temp

Physiological conditions of the animal (2x ½ =1mk)

10. (a) Canula-Trocar

(b) Brace-bit

(c) Elastrator-rubber ring (3 x ½ =1 ½ mks)

11. Plumbing tools

Stock and die

Pipe wrench /adjustable

Pipe cutter/hacksaw

Screw driver

Pipe chump

Drill

Wall punch

Plumb bob

12. Prevent warping

Prevent rotting due to fungal attack

Prevent insect damage (2x ½ =1mk)

13. Factors that lower quality of concrete

Impurities/foreign materials

Wrong ratio used

Quick drying /premature drying

Large sizes of individuals aggregates

Poor mixing

Expiry of cement (2 x ½ =1mk)

14. Maintenance in a green house

Broken frames should be repaired or replaced

Torn polythene materials should be cleaned

Dirty polythene sheets should be cleaned ( 2 x ½ =1mk)

15. Functions of ventilation

Allow sufficient air circulation

Prevent dampness

Controls temp in the house (3x ½ = 3½ mks)

16 (a) Upgrading/grading up

(b) Observable characteristics e.g colour, size, shape

Measurable characteristics e.g body, weight, milk, yield etc (2x ½ =1mk)

17. (a) Properties of a good vaccine

Should produce immunity

Have a long keeping life

Easy to administer

Be compatible with other vaccines given to the animal

Have no side effects

Single dose should produce life long immunity

(b) Drains away excess water from the fish pond

**SECTION B**

18. (a) Barbed wire fence

b) B- corner post

C-Brace

D- Dropper

E-post/strandard

F-Strainer

19. (a)A-seminal vesicles

B- Epidydymis

C-Prostrate gland

D- Sperm duct

(b) B- storage of sperms

C-Produces a neutral fluid that neutralizes acidity of urine in urethra

(c) Testes/testicles/epidydimis

20. (a) G- Liverfluke

H-Round worm

J- Tapeworm

(b) Internal parasite

(c) G-bile duct/gall bladder/liver

J- attached on the walls of small intestines

(d) G- Water snail J- cattle, sheep, goat, pig

(i) Steaming up

(ii) lactation/milk production

(iii) Flushing

(b) Flushing

(b) Give the ewe good condition for parturition

Facilitates rapid foetal development

22. (a) M- Adjustable specimen

N- mattock

(b) Tool label O can be used to open bolts and nuts or various sizes but L can only open bolts and nuts of only of particular size (1mK)

23. Routine practices and appropriate method of handling

(1) Vaccination

Animals should be in to restrict it from running away

Young animals should be tied properly in the crush

Birds should be hold by a helper as the vet officer administer the vaccine

(ii) wool shearing

Sheep is made to sit on its rump and then turned as shearing goes on.

(iii) Ploughing

Animal should be properly harnessed by a yoke. The yoke should be made by a soft material to prevent direct injury on livestock

(iv) Livestock exhibition

Bulls should be paraded by an aid of lead stick and bull rings, cows and heifers held by a halter

(vi) Transportation

Small animals i.e rabbit should be transported in cages, mature chicken in coops and chicks in perforated cartons

For large animals should be restricted in a vehicle by use of ropes and floor of vehicle spread with sow dust or straws to prevent skidding

(vi) Milking

Lactating cow should be put in the milk parlour and if necessary tied at the near legs tightly

(vii)castration- restrain the animals well-use the appropriate tool

(iii) Deworming

Correct equipment should be used

The drug should be given in small amount until the whole dose is given to prevent chocking the animal. The restraining should be applied to avoid stressing the animals

(ix) Debeaking

Restrain the chicken by tying the legs. Hold the chicken under the armpit and debeak

(ix) Ear notching

Identification put the animal in crush. Hold the ear and punch the ear appropriately

(x) Treatment

(xi) Dehorning

24 (a) Digestion of grass in rumen

Cow picks up material very fast, chews mixing with saliva and swallows

Later it chews’ cud mixing the food with more saliva

There is no enzymatic digestion in the mouth as cattle do not have ptyalin enzymes in their saliva

After the food is mechanically broken in the mouth it is passed onto the rumen

The rumen stores the food temporarily and during this time it is churmed mixed and soften with water

Micro organisms break down the carbohydrates cellulose, starch and simple sugars

The results of microbial proteins gases such as methane and vitamin B2 and K lost of the volatile fatty acids are absorbed through the rumen wall and what remains goes into the reticulum (1x7=7mks)

(b) Life cycle of the lost tick

The eggs are laid on the ground

They hutch into larva which attach of the first host

It sucks blood become engorged and then fall down to moult

It moulds into nymph

The nymph’s look for second host

Feed on blood, become engorged and fall down to moult

It moults into adult

© Precautions observed when using farm tools and equipment

1. Handle tools carefully and correctly
2. Use a tool for the right job designed for
3. Maintain the tool in good working condition
4. Dress properly when using farm tools and equipments
5. The work should be firmly secured where possible
6. Avoid wearing loose clothes especially when operating workshop tools and equipments
7. Avoid working on dangerous grounds such as on slippery floors
8. Learn how to use a tool on operate a piece of equipment before using it
9. Store farm tools in safe places such as tool racks

25. (a) Concreter or slatted floors for away cleaning

Dry litter to provide warm and dry conditions

Dry and warm to discourage infections

Spacious to provide room for exercise, feeding and placement of waters

Well lit to enhance synthesis of vitamin D for strong bones development

Well drained to avoid dampness which may encourage infections

Draught free to avoid chilly conditions that may include infections

Well ventilated to drive away bad smell

Simple hosing to avoid spread of worms and diseases

Movable –move to fresh grounds to reduce fresh infections

(b)(i) Cows that have recently calved

Goats and pigs that have recently calved

(ii) Dullness

Mascular twitching

Staggering

Falls down and becomes unconscious

Animal lies down on the side and the whole body stiffens.

Stomach contents are drawn into the mouth (lungs)

Complete loss of appetite

Sudden death

(iii) Intravenous infections of calcium boroghiconate salt

Partial milking for first 10 days

Provide heavy nutrition with ratio containing calcium and phosphorous

Give doses of vitamin D/Parathyroid extractions

Keep sick animals in a comfortable position

Give fresh water

Mechanical removal of urine