WAKISSHA JOINT MOCK EXAMINATIONS 2015
UGANDA CERTIFICATE OF EDUCATION
MARKING GUIDE
527/1
AGRICLUTURE
PAPER 1
JULY/AUGUST 2015

PART A

1. a) C

   b) A

   c) D

   d) B

2. a) Mention three conditions that make the animals suffer from bloat.
   - Feeding animals on fresh young pastures.
   - When the animals feed too rapidly.
   - Feeding on a lot of succulent feeds.
   - Feeding animals on too much proteins.

   Any 3 points 1 mark each
   3x1 = 3 marks

   b) State two methods that can be used to treat bloat.
   - Open up the rumen using a trocar and canular.
   - Giving the animals anti-bloat drugs.
   - Using the broom stick method.
   - Drenching using mineral oil.
   -
   -

   Any 2 points 1 mark each
   2x1 = 2 marks.

3. Outline five factors that affect the demand of the commodity.
   - Price of a commodity.
   - Consumers' tastes and preferences.
   - Market population.
   - Consumer's income.
   - Price of other related commodities.
   - Quality and quantity of the commodity.

   Any 5 points 1 mark each.
   5x1 = 5 points.

4. State four functions of lubricants.
   - They reduce friction in moving parts.

- Reduce or prevent rusting.
- Acts as cooling agent.
- Lubricants trap dust particles from air that goes to engine.
- They act as shock absorbers that would occur in the bearings.
- They act as a flushing agent.

Any 4 points 1 mark each.

5. Give3 reasons for pruning crops.
   - To allow free air circulation.
   - To control pests and diseases.
   - To prevent over bearing.
   - For easy spraying of crops.
   - Easy penetration of light.
   - Reduces competition with in the crops.
   - Increases yield.

6. a) State the activities invoice in the marketing of Agricultural products.
   - Buying and assembling the produce.
   - Transporting and distribution.
   - Packaging.
   - Storage.
   - Processing.
   - Grading.
   - Collecting marketing infrastructure.
   - Selling.
   - Financing.
   - Bearing risks.

Any 10 points each 1 mark
10x1 = 10 marks.

b) Outline the problems of marketing agricultural produce.
   - Perishabilty of the produce.
   - Builkness.
   - Seasonality.
   - Poor transport.
   - Change in demand.
   - Change in supply.
   - Lack of market information.
   - Natural factors like weather.
   - Long gestation

Any 10 points = 1 mark
10x1 = 10 marks.

7. a) Why is a tractor important on the Farm?
   - Provide power for ploughing.
   - Provide means of transport.
   - Provide water.
   - Provide power for stationary work/pumping water.
   - Provide power for levelling.
   - Provides power for PTO staff for slashing.

Award any 4 points for 2 marks
4x2 = 08 marks

b) State the differences between petrol engines and diesel engines.

DIESEL ENGINES	**PETROL ENGINES**
Uses diesel as fuel.	Uses petrol as fuel
Has no carburetor.	Has carburetor.
Fuel is ignited through compression.	Fuel is ignited through electrical parts.
Has no spark plug.	Has spark plug.
Has a high compression ration (16:1)	Has a low compression ration (8:1)
Produces more smoke.	Produces less smoke.
Has injectors	Has no injectors.
It is more expensive	It is less expensive
It is more robust	It is less robust
Uses less fuel per unit area	Uses more fuel per unit area.
During induction it is only air that is drawn into the combustion chamber for compression and ignition.	During induction both fuel and air inform of fuel air mixture are drawn into cylinder for compression.
It generally has fewer starting problems.	It often has more starting problems if the battery is weakand if plug points are dirty.

Award any 2 marks each
2x6 = 12 marks

MECHANISATION AND FARM STRUCTURE

8. a) Describe the features of a good calf pen.
   - Leak proof which protects the calf from bad weather.
   - Feed troughs where calves feed from.
   - Water troughs where water is put for the calves.
   - Rough slanting concrete floor to ease flow of urine.
   - Rough concrete floor to prevent the calf from sliding.
   - Individual pens to prevent calves from sucking the navel of others.
   - Short strong walls to allow free air circulation/ lighting.
   - Drainage channel to lead away urine / water during cleaning.
   - Lockable doors to prevent he calf from escaping.

Award 1mk for the features
1mk for the function 2x7 = 14mks.

b) Why is a crush important on the farm?
- Restrains animals when dehorning.
- Restrains animals when carrying out artificial insermination
- Restrains animals when carrying out identification.
- Restrains animals when carrying out pregnancy diagnosis.
- Restrains animals when vaccinating/disease control
- Retrains the animals when taking body temperature.

Award any 6 points for 1mk@
6x1 = 06 marks

CROP PRODUCTION SECTION II

9. a) Distinguish between seed dormancy and seed viability.
Seed dormancy is an inactive condition, which may be caused by an unfavourable environment or by internal as well as external seed conditions which inhibit germination while seed viability is a condition in which a seed can germinate

Award 2 marks

b) State the main causes of seed dormancy.
- Presence of seed coat which interfere with oxygen absorption e.g Oats and barley.
- Immature embryo which have not reached full development at harvest time.
- Having embryo, this may mature but have undergo certain changes before they will germinate.
- High temperatures during seed maturity which may induce the dormancy.
- Thick or hard seed coats which prevent water and oxygen in take.

Award 5marks each 1mk
5x1 = 05 marks

c) Describe the various methods of breaking seed dormancy.
- Soaking seeds in water over a time / period before planting so as to soften the testa and allow water and oxygen intake.
- Treating some seeds with hard testa to slight concentration of acids.
- Allowing seeds of small grains varieties a short period of dry shortage after harvest in order after ripen and give good germination required temperatures.
- Practicing heat treatment e.g by burning seeds to allow the seed coat open.
- Cutting off the brush covering seed coats to allow oxygen in so as to induce germination.
- Putting seeds e.g wheat seeds in an ice box at 4ºc to 6ºc for 5 days and then transferring the seeds to an alternative container at a temperature of 20ºc to 30ºc for 3 days
- Mechanical; scarification, which applies to seed coats and testa, here the seeds are thrown against a rough surface to scratch the coats the scarified seeds inhibit and absorb water to germinate in a manner.

Award12mks/2@
6x2 = 12 marks

10. a) State the characteristics of a good green manure crop.
- Should have a high nitrogen content/Legume.

- Easy to establish.
- Fast growth rate.
- Decompose/rot quickly.
- Disease/pest free.
- Easy to plough into the soil.
- Highly (leafy) vegetative.
- Be able to grow on relatively poor soil.

Award any 6 points for 1mk @
6x1 = 06 marks

b) Describe how green manure is produced on the farm.
- Land is cleared.
- Primary tillage is done.
- Secondary tillage is carried out.
- Legumes are planted at the start of the rainy season.
- At poding/flowering stage.
- Plants are ploughed back into the soil.

Award any 5 points for 2 marks @
5x2 = 10marks.

c) State the advantages and limitations of using grown manure.
Advantages
- Increases activities of micro organisms in the soil.
- Adds nitrogen in the soil.
- Adds organic matter in the soil.

Award any 2 points for 1mk @
2x1= 02 marks

Disadvantages
- Requires a lot of labour to operate.
- Delays the cropping programme.
- Increases the cost of production/ expensive
- Uses most of the water for the next crop.
- Crops used are food crops.
- Overgrown crops take long to decay and use most of the nitrogen.

Award any 2points for 1mk @
2x1 = 02mks.

11. a) State the qualities of a good pasture specie.
- Highly nutritive.

- Fast growth rate.
- Palatability.
- Drought resistant.
- Highly leafy/ vegetative.
- Recover quickly from grazing.
- Suitable height.
- Digestability.
- Ease of establishment.
- Cover the soil surface in its growth habit.
- Tolerant to pests and diseases.
- High dry matter content.

b) Describe how pastures can be improved.
   - Controlled burning; over grown pasture is set on fire and this reduces the layer of dead materials.
   - Irrigation; water is supplied artificially to the grasses and ensures continuous growth.
   - Fertilizer/manure application; ensures vigorous growth of pastures a minerals are supplied regularly.
   - Weeding; this removes unpalatable species and improves on carrying capacity.
   - Drainage; removes marshy plants and control parasites like liver flukes.
   - Slashing/topping; over grown / low nutritious grasses are cut down to encourage tillering/sprouting of young plants.
   - Perimeter fencing; prevents intruding animals which can trample over the grass.
   - Distribution of water points; even distribution in paddocks prevents over crowing over one point which lead to erosion.
   - Rotational grazing; ensures uniform grazing/ proper use of grass per day.
   - Liming; breaks down the dead materials and reduces the acidity of the soil.
   - Clearing trees and shrubs; cut down trees to allow maximum penetration of light in the pasture land.
   - Urea or molasses; spray urea or molasses on over grown less palatable grasses to improve on palatability.
   - Stocking rate; ensures correct stocking rate to overcome over grazing.
   - Standing hay; conserve a paddock without grazing to allow setting and dispersal of seeds to enable reseeding / to be grazed during dry season

Award any 6 points for 2 marks
6x2 = 12 marks.

12. a) State the objectives of breeding Farm animals.
- To improve on the physical characteristics of livestock e.g to make tolerant to certain climatic condition or hot climate.
- To improve on the production capacity of animals to increase yields of milk, eggs, beef, wool e.t.c.
- To increase animal numbers.
- To improve on the quality of livestock products of better quality carcasses.
- To get increased resistance to diseases and pests.
- To produce early maturing animals.
- To get animals which can adapt quickly to the local environment.

Award 2 marks each
5x2= 10 marks

b) How to maintain a high breeding efficiency.
- Give a cow a resting period of 60 days before service after calving; this allows the Uterus to return to its normal size before it can then expand.
- Observation of heat period.
- Controlling of breeding diseases.
- Carrying out pregnancy diagnosis
- Keeping accurate breeding records.
- Buying replacement animals from health herds.
- Practicing general sanitation programme.
- Employ the correct techniques of artificial insemination.
- Detect silence or mild heat.

Award 2 @
5x2 = 10 marks

13. a) Describe how you can use a surgical method to castrate a calf.
- Cast down the animal and hold the front and hind legs.
- Disinfect the scrotum using a disinfectant.
- Wash your hands.
- Apply anesthesia on the scrotum.
- Use a sterilised surgical blade / knife/ razor blade.
- Mark a vertical slit on the scrotum.
- Squeeze out the testes.

- Pull out the spermatic cord after the knot towards the testes
- Repeat the process to remove the second testes.
- Disinfect the wound using dettol or ash or cream to prevent infection.
- Stitch the open wound.
- Apply a fly repellant.
- Let the animal free.

Award any 12 points 1 mark each.
12x1 = 12 marks.

b) Why is castration done on the Farm?
- To improve on the quality of animal products.
- To remove bad smell from some farm animals.
- Control breeding by preventing undesirable males from mating.
- Enable the animals to put on weight.
- Improves the quality of wool in rams.
- To make animals docile.
- Makes the animals more suitable to perform farm jobs.
- Maintain the correct male to female ratio.
- Improves the growth rates of castrated animals.

Award any 8 points 1 mark each
8x1 = 8marks.

14. a) State the characteristics of a good layer.
- Large/moist active cloaca.
- Brightly coloured moist / red combs / wattles.
- Bright eyes.
- 2-3 fingers can fit between the pelvic bones.
- Pelvic bones are thin and pliable.
- Expanded abdomen and soft to touch.
- Do not go broody.
- Shanks/beaks yellow/not pigmented.
- Rough/form feathers.
- Few feathers.
- 3-4 fingers can fit between the keel/breast bone/pelvic bone is wide.
- Skin is soft/ loose with little fat.

Award 6 points for 1mk @
6x1= 06 marks.

b) State the advantages and disadvantages of using a deep litter system.
Advantages
- Birds are protected from predators.

- A large number of birds can be kept in a small space / high stocking rate.
- Provide high quality manure.
- A small area of land is required.
- Record keeping is easy.
- Birds are protected from bad weather.
- Low labour requirements.
- Seek birds can easily be identified and isolated.
- Ammonia released during decomposition of organic matter acts as disinfectant against coccidiosis.
- Production relatively higher with good management.

Award 8 points for 1mk @
8x1 = 08 marks

Disadvantages
- Expensive to start.
- Birds lack adequate exercise.
- Vices are common.
- Easy spread of diseases.
- Litter can contaminate feeds/water.
- Parasites can accumulate in the litter if not raked regularly/replaced.
- Expensive to feed birds.
- Confortable liter can encourage birds to go broody.
- Dusty liter predispose birds to pneumonia.
- Vitamin deficiencies occur frequently due to imbalanced feeds.

Award 6 points for 1mk @
6x1= 06 marks.

END