**527/1**

**UGANDA CERTIFICATE OF EDUCATION**

**PRINCIPLES AND PRACTICES OF AGRICULTURE**

**PAPER 1 - THEORY**

**SUGGESTED MARKING GUIDE**

**PART A (20 MARKS)**

1 (a) - B

1. - C
2. - B
3. - D

Award ½ mark each ½x4= (02 marks)

2. Drainage in water logged areas.

- Terracing in hilly areas

- Bush clearing in forested areas

-Irrigation in arid and semiarid areas

**Award 1 mark for 1 point 1x4 = (04 marks)**

**3(a). –** It enables a farmer to know whether the farm is solvent or insolvent

It enables a farmer to acquire a loan/credit

It is important for members to share dividends in case of cooperative basis.

**Award 1 mark for 2 point 1x2 = (02 marks)**

**(b).** A risk is a situation where a former has partial knowledge of the future events and can be insured against (OWETTE) **(Award 02 marks)**

1. Coat them with used Engine oil to avoid rusting

* Paint them to avoid rusting
* Sharpen cutting tools regularly
* Hang them on racks to avoid rusting
* Replace damaged parts immediately
* Use tools for the right Job
* Repair damaged parts immediately

**Award 1 mark for any 5 points 1x5 = (05 marks)**

1. - It avoids frictions between moving parts

-It avoids rusting of metal engine parts

It acts as a cooling agent

It acts as a cleaning agent because it has detergents

It traps dust and metal filings as a result of tear and wear

**Award 1 mark for any 5 points 1x5 = (05 marks)**

1. (a). Individual money lenders

* Commercial banks
* Insurance Companies
* Cooperatives
* Merchants or traders
* Non-governmental organizations e.g. micro finance

**Award 1 mark for any 5 points 1x5 = (05 marks)**

**(b)** Short grace period given

* High interest rates demanded
* Natural hazards e.g. drought/floods
* Poor health of the farmers or family member
* Shortage of extension staff
* Poor planning and management
* Change in Demand
* Insecurity/theft of the produce on the farm and during transit
* Price fluctuation
* High risks in Agriculture
* Death of a farmer
* Pests and diseases

**Award 1 mark x 10 points 1x10 = (10 marks)**

(C ). Farmers should be informed about available viable business

* They should be sensitized on how to manage firms
* They should be taught on how to manage firms
* They should ensure that collateral securities are presented before acquiring credit facilities
* They should follow up credit/ farmers

**Award 1 mark for any 5 points 1x5 = (05 marks)**

7(a). It’s able to work in areas of obstacles due to its free rolling action

* Its heavy and effective in heavy cultivation
* It’s important in Soil and water conservation due to its poor ability to cover trash
* It requires less tractor power to pull
* It has a low maintenance cost since it has no shares to sharpen
* It is able to work in heavy sticky soils
* It’s a quick and has a fast rate of doing work
* It ploughs well in areas covered with long loose rubbish as it rolls over them
* It loosens and mixes the soil rather than inversion
* It’s easy to mount on a tractor
* It’s able to work in hard soils

**Award 1 mark for any 10 points 1x10 = (10 marks)**

(b). Start the engine

* Drive the tractor forward and set in line with the plough
* Drive backwards towards the plough/reverse the tractor
* Set until lover links come in contact with the plough
* First connect the right lower links. This will give support the top link
* Adjust the top link level, pulling and pursuing the plough to ensure connection of the second lower link
* Connect the left lower link
* Fix and tighten the bolts and nuts
* Carryout proper setting and adjustments for proper ploughing
* Use hydraulic to lift the plough off the ground
* Drive the tractor off to the garden to plough

**Award 1 mark for any 10 points 1x10 = (10 marks)**

8 (a).– Ensure that the land being fenced is the right one

* Clear the area where a fence line is going to pass
* Use pegs to set the positon of the posts
* Set them in a straight line using a sisal string
* Set the corner and gate posts together with their support at each end
* Dig post holes just wide enough to take the size of the post using a hole digger
* Fit the posts and struts in their respective holes
* The posts should be 2 meters above the ground
* Pour in concrete and motar and ram frequently
* Fit in the standards and repeat the procedure
* Nail struts to .. and gate posts with long nails
* Stretch the wire using a wire strained
* Fix the wires using U nails
* Repeat the procedure with the remaining strands of wire
* Fix droppers to avoid wire sag

**Award 1 mark for any 10 points 1x10 = (10 marks)**

(b). It facilitates rotational grazing and night paddocking

* Helps the farmer to isolate sick animals
* They avoid boundary disputes
* They make mixed farming possible
* Double fences are effective in control of ticks
* Live fences add beauty to land
* They confine farm animals for specific operations and management
* It restricts wondering animals from entering the farm
* They help to group animals according to their age which makes feeding easier
* They protect water points safe for farm use
* They reduce on labour requirement on the farm as livestock do not need to be followed
* They add value to farm land
* They help to seal off dangerous points e.g. holes and vallies
* They help to control breeding/random mating

**Award 1 mark for any 10 points 1x10 = (10 marks)**

9(a). – Livestock hunting for paratable pastures

* Poor conditions of livestock
* Wet areas containing marshy plants
* Presence of implantable plants and weeds
* A low portion of productive pastures
* Presence of a layer of un-decayed plant residues

**Award 2 marks for any 5 points 2x5 = (10 marks-block marks)**

(b). Fencing and division of the area into padlocks

* Controlled burning to reduce a layer of dead plants
* Application of lime to reduce acidity of soil
* Spray unpalatable pastures with molasses mixture to improve palatability
* Removal of poisonous weeds and plants
* Conservation of grasses in form of … hay
* Ring banking of un wanted trees to open up the area
* Closer herding of livestock to give uniform grazing but avoid overgrazing
* Good distribution of water points to avoid over and under grazing
* Over sowing and spot sowing of nutritious grasses and legumes
* Application of fertilizers to improve soil fertility

**Award 1 mark for any 10 points 1x10 = (10 marks)**

* 10.a. They can grow in a variety of soils
* They reduce little labour and attention
* They can stay in the soil for a long period of time until required
* They are resistant to many pests and diseases
* They require processing before eating compared to cereals

**Award 2 mark for any 5 points 2x5 = (10 marks)**

(b). **by pricking out.** This is the removal of excess seedlings form the nursery bed to another nursery bed or seed box

* It is done to avoid completion
* **Hardening off:** This is the gradual exposure of seedlings of actual field condition/ to clamitise to field conditions
* **Watering:** This should be done twice a day i.e. in the morning and evening
* **Spray with Chemicals** to control pests and diseases
* Hand weeding to avoid competition

**Award 2 mark for any 5 points 1 mark mention, 1 mark explanation 2x5 = (10 marks)**

11a). Through dinitrification

* Through immobilization
* Through leaching
* Through burning
* Through leaching
* Through plan uptake
* Trough soil erosion

**Award 1 mark for any 5 points 1x6 = (06marks)**

**(b).** Nitrogen fixation through free living bacteria agrotobacter and symbiotic bacteria rhizobium

* Absorption nitrates by plant roots
* -Feeding of animals on plant proteins
* Death and decay of plants and animals to firm organic matter
* Purification of ammonification of organic matter to ammonium compounds
* Nitrification of Ammonium compounds to Nitrites and to Nitrates
* Dinitrification of nitrates to Nitrogen air

**Award 2 mark for any 7 points 2x7 = (14 marks-block marks)**

**2 (a). Using Pearson square method**

Ration reduced 16% CP

Ingredients

* Maize bran 42% Cp ingredients
* Cotton seed cake 28%

16% CP

Maize 42% Cp 12 Parts of maize

Cotton Seed Cake 28% Cp 26 Parts of Cotton Seed Cake

38 Total Parts

Proportion = Part

Total Parts x 100 % 1 mark

Proportion of maize = 12 x 100 %

38

31.5% cp/=32% Cp 2 marks

Proportion of cotton seed cake

= 26 x 100 % 1mark

38

68.4%/=68% Cp 2 marks

Total 15 marks

(b). – Cost of the feed material

- Nature of final mixture ie mash/pellets

- Palatability of the feed

- Wholesomeness i.e should not cause disease

- Age of the animal

-Type of the animal i.e. ruminants/non ruminants

-Nutrient Composition

- Availability of the feed

**Award 1 mark for any 5 points 1x5 = 05**

13(a). – Restrain and slaughter the animal

* Hoist the animal to ensure complete bleeding
* Flay the animal carefully to avoid damage
* -Wash hides is running water using a brush
* Hang to drain
* Carry out fleshing to remove non leather materials
* Suspend hides in poles to dry
* -Trim hides to make them regular
* Fold hides along the spire with the hairy and part inside
* Tie hides in bales and transport for sale.

**Award 2marks for any 6 points arranged in order 2x6 = 12**

b). Damage by parasites e.g.

* Physical and mechanical damage
* Diseases e.g. ring worms
* Burses due to poor transportation
* Careless branding
* Poor feeding of arm animals

**Award 1 mark for any 4points 1x4 = 04**

* 14. Ensure that the milking shades and clean
* The milking utensils should be clean
* The milker man should be clean
* -Bring the animal to the milking shade
* -Give the animal something to eat
* -Wash the teats of the animal using warm, water and soap
* Dry the teats using a hand towel
* Drop milk into the strip cup from each teat to test for mastitis
* Animals with mastitis should be milked last and milk poured away
* Apply milk salve/jelly on teats to reduce friction
* Milk quickly to take advantage of milk let down
* Filter milk using a milk sieve
* Put milk in a milk can and transport for sale

**Reject where students don’t bring the animal to the shade**

**Award 2 mark for any 10 points arranged in order 2x10=20**