**3KNT ALLIANCE JOINT EXAMINATIONS – 2017 FORM FOUR**

**AGRICULTURE PP 1 MARKING SCHEME**

**SECTION A (30MKS)**

1.

- Climate

- Skills/knowledge of the farmer

- Capita availability

- Topograpy

- Size of the farm

- Type of the soil

2.

- Increase production per unit area.

- Farm supervision in easy

- Maximizes utilization of available land

- Ideal for densely populated areas/small land holding

- Utilizes technology to increase production.

3.

- The relative arrangement of soil particles into clusters or aggregates in a given soil sample.

4.

- Allow time for weeds to dry and decompose

- Allow for proper soil aeration.

- Allow timely planting/subsequent operations

- Allow time for soil clod to disintegrate/soften

5.

- Burns important soil organisms.

- Burning oxidizes non-metallic nutrients e.g. sulphur, nitrogen e.t.c.

- Burns organic matter, loosens the soil hence soil erosion.

- Destroy soil structure.

- Fire can get out of control/burn other structures.

- Evaporates the little soil moisture.

6.

- Has appropriate depth.

- Proper drainage

- Good water holding capacity

- Free from soil borne pests and diseases.

7.

- Nitrates NO3 (aq)

- Ammonium ion NH4 (aq)

8.

- Straight fertilizer contains one of the three major nutrients among (NPK) while compound fertilizers contain two or three of the major nutrients among NPK.

9.

- Field operations can be mechanized.

- Easy to establish plant population.

- Low seed rate than broadcasting

- facilitates cultural practices/accept specific practices

- Ensures proper spacing

- Ensures uniform germination of seed.

10.

- Parcel number/ location

- Size of the land

- Name of the owner

- Date of registration

- Seal

- Condition of issue if any

- Signature of issuing officer.

11.

a) Mixed cropping – growing of two or more crops on the same field but on different sections.

b) Monocropoing – growing of only one type of crop.

c) Intercropping – growing of two or more crops in the same field at the same time.

12.

- Seed planting

- Germination percentage

- Spacing

- Number of seeds per hole

- Purpose of the crop

13.

- Produce large quantities of seeds

- Seeds remain viable for a long time.

- Some have affective mechanism of dispersal

- Some are able to propagate vegetatively

- Some have underground structures.

- Some have short life cycle.

14.

- It’s a divergence/deviation from the normal plant functions e.g. leaf failing to photosynthesis.

15.

- By making hay

- By making silage

- By cutting and feeding to livestock as green fodder.

16.

Monopoly – market dominated by only one seller

Monopsony – market dominated by only one buyer.

17.

- Boundaries

- Along river banks

- Along terraces

- On sloppy areas

- Homesteads

18.

- Leguminous trees for nitrogen into the soil.

- Trees acts as wind breaks

- Trees stabilizes soil against soil erosion

- Leaf litter decompose to form humus/recycled nutrient

- Trees improve and act as water catchment areas/conserve water.

**SECTION B (20MKS)**

19.a) Zig-zag

b)- Avoid taking soil from old ……………..heaps

- Along the boundaries

- On the slopy areas e.t.c.

c)- To determine soil pH

- To determine the amount of nutrient to all.

20.a) Sprinkler/overhead irrigation

b)- Cleaning after use

- Unblocking blocked nozzles

- Lubricating rotating parts

- Repairing/replacing broken/worn out parts.

- Proper storage after use.

- Oiling to prevent rusting

- Tighten loose nuts.

c)- Irrigation does not wet the foliage hence controls fungal diseases.

21.a) Forking

b) Use of too much manure/organic manure.

c)- Thinning

- Weeding

- Top dressing

- Pest control

22.a)

UPENDO FARM

BALANCE SHEET AS AT 30.12.2015

LIABILITIES ASSETS

Current liabilities Current assets

Overdraft 15,000.00 Debts receivable 20,000.00

Unpaid wages 3,000.00 Stocks 25,000.00

Bank balance 100,000.00

Longterm liabilities Fixed assets

Bank loans 30,000.00 Perennial crop 250,000.00

Land 350,000.00

Livestock 250,000.00

NET WORTH 897,000.00

**945,000.00 945,000.00**

**SECTION C**

23. Sorghum Production

a) Ecological requirement

- Altitude 900 – 1500m asl

- Temperature 300C

- Rainfall 420 – 600mm per year (during growing seasons)

- Soil – fertile, well drained, aerated soils.

b) Land prepareation and planting

- Deep ploughing

- Harrowing to break soil clods of soil

- Rotavating to get fine tilth

- Broad cast the seeds.

C0 Pest and disease control

- Pest includes birds, sorghum shoot fly, stem borer and are controlled by following;

- Trapping and killing birds

- Scaring the birds away

- Spraying with appropriate agro-chemicals.

- Diseases

- Spraying with fungicides

- Full vector control

- Field hygiene

- Planting resistant varieties

d) Harvesting and marketing

- Heat cut with a sharp knife upon drying in the field.

- Sun dried

- Packed

- Delivered to Retailers or NCPB.

24.a) Cultural soil and water conservation

- Grass/Filter stries – reduce speed of flowing water/filter soil.

- Cover cropping – prevent surface flow/reduce impact of rain drops.

- Contour farming – creates ridges of soil which hold up water.

- Mulching – Reduces impact of rain drops/prevent evaporation/surface run-off

- Rotational grazing – allows grass to recover for soil and water conservation

- Inter-cropping – provide adequate cover on the soil

- Crop rotation – maintains soil cover for protection against erosion/improves soil structure thus increasing infiltration.

- Strip cropping – the different strips reduce speed of run off.

- Afforestation/re-afforestation – acts as water catchments/stabilizes soil/canopy intercepts rain drops.

- Agro-forestry – stabilizes soil/canopy intercepts rain drops.

- Correct spacing of crops – ensures adequate soil cover.

b)i) Effects of HIV/AIDS

- Shortage of labour.

- Lack of motivation to invest in Agriculture.

- Increased cost of living leading to low investment in Agriculture.

- Lack of market for agricultural produce.

- NGOs are spending a lot of time and resources controlling the diseases instead of investment in Agriculture.

ii) Government policy improve agricultural production.

- Provision of extension services/education.

- Ensure control of parasite/diseases/weeds done effectively

- Funding research into new and improved agricultural production technology

- Construction of bulky handling and storage facilities for agricultural products.

- Providing subsidized on agricultural inputs e.g. fertilizers

- Imposes high taxes on imported agricultural products.

- Imposes laws to regulate quality of agricultural products.

- Facilitates soil conservation.

iii) Low levels of education and technology

- Improper timing of routine practices

- Lack of Agricultural skills

- Low production of low quality

- In appropriate decision

- Delayed adoption of new and improved production technologies.

- Lack of knowledge to apply/types/inputs

- Inability to collect market information.

25.a) Physical pest control

- Use of lethal temperatures to kill the pest.

- Proper drying of produce to make it hard for pest to penetrate.

- Flooding drowns and kill pest.

- Suffocation to kill pest in air tight containers.

- Physical killing of pests/trapping and killing

- Use of scare crows/scaring away the pest.

- Use of physical barriers to prevent infestation by pest.

b) Factors for competitive ability of weeds.

- Some produce large seed qualities to enhance survival/chances.

- Some remain viable in the soil for long time to await favourable condition to germinate.

- Some are easily and successfully dispersed to enhance chances of survival

- Some have ability to propagate vegetatively into new plants.

- Some have extensive root system to enhance survival in drought conditions

- Some have short life cycle which is completely early before adverse climatic conditions set in..

- Some irritate animals as protective measures against grazing.

- Some weeds are allelopatric effects which suppress growth of other weeds thus enhancing their survival.

- Some are heavy feeders they make food faster than crop establishes.

c) Harvesting of coffee

- Pick red ripe berries

- Spread the berries on sisal mat and sort them into grades 1, 2 & 3

- Deliver grade 1 and 2 to factory for pulping same day

- Dry grad 3

- Deliver grad 3 to factory at end of harvesting season.

- Picking intervals of 7 – 14 days.