**AGRICULTURE PAPER 1 Marking Scheme**

1. Because it involves experimentation and application of scientific knowledge ***(1 x 1 = 1mks )***

*2.*

Shifting cultivation

Nomadic pastrolism

Agroforestry

Organic farming

Mixed farming

Ranching ***( Any 4 x ½ =2mks )***

*3.* Soil structure is the physical appearance of soil according to the way individual soil particles are arranged /packed/aggregated while soil texture is the relative proportion of various sizes of the minerals particles of the soil ***(1 x 1 = 1mks) Mark as whole***

*4.*

To increase soil aeration

To increase soil volume

To raise soil temperature

To increase microbial activities

To reduce soil erosion

To get rid of toxic substances that may be disastrous to good crop performance ***( Any 4 x***

***½ =2mks)***

*5.*

Lowers the level of water in the Dam and reservoirs

Decline in fish production ***( 2x ½ =1mk )***

*6*

It encourages early establishment of crop pasture

Saves on the use of commercial fertilizers

There is intensive use of land i.e it promoted intercropping /Efficient land use Controls soil erosion due to efficient ground cover ***( Any 3 x ½ =1½mks )***

*7.*

It encourages seed germination

Promotes microbial activities

Improves quality of crop produce

Enhances vigorous growth and development

Enhances high yields

Minimises incidences of certain pests and diseases ***( Any 4 x ½ =2mks )***

*8.*

1. Suckers
2. Suckers/slips/crowns
3. Stemtubers
4. Splits ***( Any 4 x ½ =2mks***

9.

Reduces land disputes

It acts as security of land ownership

Can be used as security for loan

Encourages farmers to carry out long term investment on land ***(4 x ½ =2mks )***

10*.*

Crop rotation – Growing of crops of different families on the same piece of land in an orderly sequence (***1 mks )***

Mulching – covering of ground around a growing crop with organic material or artificial sheets (***1 mks )***

*11.*

Seed impurity

Low – germination percentage

Close spacing

More seeds per hole / Broadcasting

Early planting /Dry Planting ***( Any 4 x ½ =2mks )***

12.**Role of Nitrogen**

Constituent of chlorophyll

Promoted crop vegetative growth

Protein synthesis

Regulates availability of phosphorous and potassium in the soil Improves the quality of leafy crops ***( Any 3 x ½ =1½mks )***

*13.*

Training

Giving incentives /improving terms and conditions

Farm mechanization

Labour supervision

Proper payment / Renumeration

Assigning tasks or duties according to skills ***( Any 4 x ½ =2mks )***

*14.*

To raise the PH of the soil To improve fertility of soil

To improve the structure of the soil

To improve the process of nodulation in Legumes  ***(4 x ½ =2mks)***

*15.*

Organic mulch

Crop residue /animal remains

Green manure

Farm yard manure

Compost manure ***( Any 3 x ½ =1 ½ mks )***

*16.*

Drying

Threshing /shelling

Winnowing

Dusting

Sorting out

Packaging

Processing ***( Any 4 x ½ =2mks )***

*17.*

Plants morphology and anatomy

Stage of plant growth

Weather conditions

Formulation

Concentration

Method of application

Type of weeds

Weed metabolic factors ***( Any 3 x ½ =1½ mks )***

*18.* Act of deciding on how to allocate available scarce resource to alternative uses based on farmer’s interest ***( 1 x 1=1 mk )***

**SECTION B (60MKS)**

19.

a. Blossom End Rot ***( 1 x 1=1 mk )***

*b.*

Irregular application of water /water stress;

Excessive application of Nitrogen in early stages

Deficiency of calcium – reject lack of calcium ***(3 x 1 =1 mks )***

*20.*

1. Army worm ***( 1 x 1=1 mk )***
2. Mode of feeding – Biting & chewing ***(1 x 1=1 mk***

c.

* + Damage theleaves thus reducing Photosynthesis area
* Damage the stem thus interfering with transport system
* Injure and cause wound on plants exposing them to secondary infection ***(3 x 1 = 3 mks )***

*21.*

a. Ridging ***( 1 mk )***

*b.* Dig soil in a continuous lines

Soil is heaped on one side for form a ridge and a furrow

( 2mks )

1. Advantages

Enhances expansion of tubers

Makes harvesting of root crops easy

Prevents soil erosion

Conserves soil moisture ***( Any 2 x 1=2 mk )***

*22.*

1. Per capita income = Gross Domestic product/Population

Country A = 1800/36 = 50

Country B = 1200/15 = 80 ***(3 mks )***

1. Country B is more developed ***(1 mk )***
2. Has higher per capita income ***(1 mk )***
3. By creating employment , developing industries , increasing production. ***( Any 2 x 1=2 mk)***

**SECTION C (40mks)**

23.

a.

* 1. Selection and preparation of planting materials

Beans are established from seed

Select seeds to discard damaged and wrinkled ones

Dress seeds with appropriate chemical to control soil borne pests .

Innoculate seeds with right strain of Rhizombium bacteria ***( Any 3 x 1 =***

***3mks***)

* 1. Planting

Plant at the onset of rain

Plant 2 -3 seeds per hole at a spacing of 30-45 cm by 15cm

Apply DAP fertilizer during planting

Plant at the depth of 4cm ***( Any 3 x 1 = 3mks***)

* 1. Disease control control haloblight by rogueing , crop rotation and spraying with appropriate fungicide

Control bean anthracnose by spraying with appropriate fungicide planting resistant varieties ***(Any 2 x 1 = 2mks***)

b.

Soil type

Soil moisture content

Type of germination

Size of seeds ***(Any 4 x 1 = 4mks***)

c.

 Advantages of mixed grass legume mixture Over pure grass

Its more paratable

Farmers has security against total loss due to attack by pests, diseases or bad weather

Mixed pasture yields more per unit area than pure grass pasture

Mixed pasture make maximum use of soil nutrients

Mixed pasture has better weed control effects

Mixed pasture increases soil fertility because of Nitrogen fixation There is economy in use of fertilizers in mixed pasture .

There is better distribution of growth in a mixture of early and late maturity species ***( Any 8 x 1 = 8mks )***

*24.*

a.

Ability to produce large quantities of viable seeds e.g. pigweed and blackjack. Weeds seeds remain viable in the soil for a long time waiting condusive germination conditions

Most weeds seeds are easily and successfully disposed

Some weed seeds have ability to propagate vegetatively eg. Couch grass Some have elaborate or extensive root system useful in supporting the plant in nutrient absorptions of water upatake

Ability to survive in soil with low nutrient supply

Have short life cycles hence reaching maturity early. ***(7 x 1 = 7mks )***

*b.*

Capital availability

Type of soil

Topography

Type of crop to be irrigated

Water availability ***(5 x 1 = 5mks )***

*c.*

Good drainage

It is well aerated

Good depth

Good water holding capacity

Adequate supply of nutrients

Correct soil PH

Free from soil borne pests and diseases ***( Any 5 x 1 = 5mks )***

*d.*

Superflous water

Capilary water

Hygroscopic water ***(3 x 1 = 3mks***)

25.

a.

They are highly volatile

They are highly soluble in water

They are highly hygroscopic

They are easily leached

They have a scorching / burning effect

They are highly corrosive

They “cake” easily

They have a short residual effect ***( Any 5 x 1 = 5mks )***

*b.*

Include a grass ley in the programme whereby crops are alternated with certain grass to improve soil structure

Crops of the same family should not follow one another Deep rooted crops should be alternated with shallow rooted crops

Crops that are difficult to weed should alternate with those that are easy to weed Crops that requires a lot of nutrients ( heavy feeders ) should come first followed by light feeders

Leguminous crops should be included in the cycle to improve soil fertility

Crops associated with certain weeds should alternate with those that are not ***( Any***

***5 x 2 = 10mks***)

c.

Excess seedlings can be sold to earn income

It facilitates production of many seedlings in a small area

Routine management practices are easily and timely carried out than in the main seedbed

Facilitates planting of small seeds

It ensures transplanting of only healthy and strong seedlings

The crops takes a shorter time in the field

Tender seedlings are given maximum attention

Gives a higher germination percentage hence a lower seed rate is used ***( Any 5 x 1***

***= 5mks )***