MARKING SCHEME FORM 1 AGRICULTURE

1. Conditions under which shifting cultivation is practicable

-Communal land ownership

-Large pieces of land

-Sparse population. 3x1 = 3mks

2. Disadvantages associated with the burning of land.

 - Destroys beneficial soil micro – organisms

 - Destroy the soil structure

 - Destroy soil organic matter

 - Pollutes the air

 - Reduces soil fertility by vaporizing nutrients. 4x 1 = 4mks)

3. The environmental conditions that may lead to poor crop yields

 - Strong winds

 - Low relative humidity

 - Lack of or excess rainfall

 - Extreme temperatures

 - Low light intensity 4x 1 = 4mks)

4. Human factors that influence production and distribution of crops and livestock

 - Level of education and technology

 - Health

 - Economy

 - Government policy

 - Transport and communication

 - Cultural practices and religious beliefs

 - Market forces.

 - Labour supply (4x 1 = 4mks)

5. A) Sub – soiling is the practice of breaking hardpans compacted soil in the sub soil. 1x 1 = 1m

b) Advantages of minimum tillage

 - Save money and time of cultivation

 - Controls soil erosion

 - Reduces loss of nutrients through oxidation

 - Minimizes soil structure disturbance/ maintain soil structure

 - Reduces root disturbance

 - Conserves moisture

 - Reduces labour requirements 4 x 1 = 4mks)

6. Types of pumps

 -Centrifugal pumps

 -Piston pumps

 - Semi –rotary pumps

 - Hydram. 3x 1 = 3mks)

7. Properties of clean and safe water

 -Free of pathogens

 - Colorless/ Clear

 -Odorless

 -Tasteless

 - Neutral Ph

 - Free of foreign contaminations. 4x 1 = 4mks)

8. Methods of surface irrigation

 - Basin irrigation

 - Flood irrigation

 -Furrow irrigation (3x 1 = 3mks)

9a) Drainage is the removal of excess water from the land/rehabilitation of swampy land 1x1 = 1mk

* Too much rainfall on low land
* Shallow soil profile
* Hardpans
* High water table
* High water retention and holding capacity 3x 1 = 3mks)

10. Agricultural practices that cause water pollution.

 -Sewage and other oxygen demanding wastes.

 - Plant nutrients that can stimulate the growth of aquatic plants/ algae

 - Exotic organic chemicals eg pesticides

 - Petroleum, especially from oil spills

 - Sediments consisting of soil and mineral particles washed by storms and flood water

 From farms.

* Effluents from agricultural processing factories.
* Surface – active substance in detergents. 4x 1 = 4mks)

11. A tool used for each of the following operations

 i) Strip cup 1x1 = 1mk

 ii) Hoof cutter 1x 1 = 1mk)

12a) Identification of tools

 D – Hacksaw (1x 1= 1mk

 E - Cross – Cut saw (1x 1= 1mk)

b) Function of each tool.

 D – For cutting wires and metals ( 1x 1 = 1mk )

 E – F or cutting across the grains of timber/ wood ( 1x1 = 1mk)

c) Maintenance practice carried out on tool E.

 - Tighten loose screw and nuts

 - Teeth setting should be done

 - Straighten the blade when bent

 - Regular cleaning should be done

- - Oil blades before storing them for long

 - Broken handles should be replaced or repair

 - Regular sharpening of the teeth should be done.

 - Proper storage any 1x1 = 1mk

13a) Identification

* French drain ( 1 x1 = 1mk)

b) Other methods used in draining farm land.

 - Planting trees

 - Pumping

 - Cambered bed

 - Underground drain pipes

 - Open ditches any 4x ½ = 2mks)

c) Reasons for draining farm

 - To increase soil aeration

 - To increase soil volume

 - To raise soil temperature/ warmth

 - T o increase microbial activities

 - To reduce soil erosion

 - To remove toxic substances 4x ½ = 2mks)

 - Enhance soil PH

 - Improve soil structure

14a) Identification

 H – Sandy soil

 J – Loam soil

 K - Clay soil 3x 1 = 3mks)

b) Soil type with highest porosity

 H/Sandy soil 1x1 = 1mk

c) Type of soil suitable for planting paddy rice

 K/Clay soil 1x1 = 1mk)

15. Completed table that classifies soil base on the size of soil particles

|  |  |
| --- | --- |
| Particles | Size (diameter) in MM |
| Stone/gravel | Above 2.0mm |
| Coarse sand | Between 0.20mm and 2.00mm |
| Fine sand | Between 0.20mm and 0.20mm |
| Silt | Between 0.002mm and 0.02mm |
| clay | Below 0.002mm |

 5x 1 = 5mks)

16a) Identification

Stir – up pump (1x 1 = 1mk)

b) Use of the equipment

Spraying livestock against external parasites 1x1 = 1mk

C) E – Nozzle

 F - Lance

 G – Trigger (3x 1 = 1mk)

17a) Identification

Drip irrigation (1 x 1 = 1mk)

b) Disadvantages of the methods of irrigation

 - Expensive to install

- - Can only use clean water since nozzles can be blocked

- High technological skills required. (2x 1 = 2mks)

c) How is drip irrigation is maintained.

 - Repair broken pipes

- Unblock the perforations

- Use phosphoric acid to dissolve salt deposits ( 2x 1 = 2mks)

18 a) Biotic factors influencing agriculture

* Pathogens
* Decomposers
* - Pests
* Pollinators
* Predators
* Nitrogen fixing bacteria
* Parasites 6x 1 = 6mks)

b) Aspects of rainfall

 - Rainfall amount

 - Rainfall distribution

 - Rainfall reliability

 - Rainfall intensity 4x 1 = 4mks)

19. Factors that determine the number of times secondary cultivation is done

 - Type and size of planting material/type of soil

 -Cost involved

 - Time available

 - Skill of the tractor operator

 - Zoography/slope of land

 -Soil moisture content/ Soil type

 - Land condition/type of implement used in primary cultivation/amount of vegetation on the land. 5x 1 = 5mks)

b) Advantages of minimum tillage

 - Control soil erosion

 -Reduces cost of cultivation/ save money and time

 -Reduces loss of nutrients through oxidation

 - Minimizes soil structure disturbance/ maintains soil structure

 - Reduces roots disturbance

 - Conserves moisture

 - Reduces labour requirements. 5 x 1 = 5mks)

20 a) Importance of water treatment

* To destroy pathogens/ to kill the harmful micro- organisms
* To remove chemical impurities/ soften
* To remove smells/ bad odor
* To remove sediments/ to dissolve impurities. 4x 1 = 4mks)

B) Factors determining the choice of the type of irrigation used.

 -Type of soil

 -Rate of evaporation

 -Quantity of water required and available

 - Crop type to be irrigated

 - Available capital

 - Slope of land. 6x 1 = 6mks)