**JINJA JOINT EXAMINATIONS BOARD**

**MOCK EXAMINATIONS 2019**

**527/2 AGRIC MARKING GUIDE:**

**1 a).**

|  |  |  |  |
| --- | --- | --- | --- |
| Soil sample | Observation | pH Value | pH of the soil |
| A | -Deep blue/blue  -Violet  -Indigo  -Purple | 8-9  12-14  10-11  11-12 | Slightly alkaline  Strongly alkaline  Moderately alkaline  Very alkaline |
| B | Red  Pink  Orange  Yellow | 1-2  3-4  4-5  5-6 | Strongly acidic  Acidic  Moderately acidic  Slightly acidic |

***Award ½ mark each for the observation pH value and pH condition in A and B* = *3marks***

**b) Reason for adding barium sulphate to the soil.**

It helps to break soil particles and settle them at the bottom of the test tube.

***Award 1mark for the correct answer* = 1mark**

**c) Two problems associated with using samples A and B for crop production**.

Sample A

It only favors the growth of crops that do well in alkaline condition.

Certain minerals are not absorbed in the soil.

Sample B

Lack of adequate nutrients like nitrogen, which is available at pH of 6.0-8.0

Absence of microorganism like bacteria that prefer high pH.

***Award ½ mark each for any one correct problem in A and B******=2marks***

d**) Possible causes of the conditions observed in soil samples A and B, in 1 (c) above**.

**Sample A**.

Weathering of limestone

Addition of bases e.g. lime

Irrigation using saline water

Drought conditions

Underground seepage

**Sample B**

Presence of acidic soluble salts which may arise from fertilizer, weathering of minerals.

Leaching of bases which are later replaced by hydrogen ions.

Water logging.

Acidification due to rain water artificial fertilizer.

Uptake of bases by plants leaving hydrogen ions in the soil.

***Award ½mark each for any two correct cause in A and B =2marks***

**e) How to change the pH of A, to make it suitable for most cultivate crops**

By adding acidic organic matter

By adding acidic fertilizers eg sulphate of ammonia

***Award 1 mark each =2marks***

1. **a)Classification of the specimens: (2marks)**

**D**

Internal parasites/Endo parasite

**Reason:**

Live inside the body of the host

Flattened body to fit inside the intestine

Suckers for sucking nutrients from the host

Hooks for attachment to the intestine of the host

Segmented body that is detached able for reproduction.

**C**

Live outside the host body

**Reason:**

Pointed mouth part for easy attachment/sucking blood.

Small size easily carried by host

Tough outer coat for protection/prevents desiccation

**b).Effects of each specimen on its host.**

**D**

Bloated/swollen abdomen/pot belly

Sucks digested food from the intestine leading to stunted growth

Cause intestinal obstructions/blockages.

Emaciation/becomes thin and weak.

**C**

They suck blood from animals causing anemia

They cause wounds on the body through their bites

They transmit diseases to animals

They damage the hides and skins of the animal and lower their value

***Award ½ mark each for any one correct effect in D and C = 1mark***

***c)* .Drawing of specimen D**

***Award ½ mark for the title,½ mark each for any 3 labeled parts = 3marks***

**d).How the specimen is spread on the farm**

Through feaces

Through snails

Through eating poorly cooked meat, the bladder worms are taken in.

***Award 1mark for any one* point *= 1mark***

**e). Control methods:**

Inspection of all pork and beef

Thorough cooking of all pork and beef

Proper disposal of human feaces.

Treat affected animals with CUSO4.

***Award 1 mark for any 3 points =3marks***

1. **a)**

|  |  |  |  |
| --- | --- | --- | --- |
| Specimen | Life span | Leaf morphology | Propagation method |
| **F** | Perennial | Narrow leaved | Rhizomes |
| **G** | Perennial | Narrow leaved | Splits |
| **H** | Perennial | Broad leaved | Rhizomes  Bulbs |
| **I** | Perennial | Broad leaved | Divisions |

***Award ½ mark each for life span, morphology and propagation for F, G, H, and I = 6marks***

**b) Features that make them very difficult to control**

**F** Rhizomes

**G** Splits

**H** Rhizomes, Bulbs

**I** Divisions

**c) Ways by which each specimen can be controlled**

**F** Chemicals e.g. Dalapon.

Deep ploughing during dry season.

Uproot rhizomes and burn it.

**G** Chemicals.

Deep cultivation.

**H** Chemicals.

Deep cultivation.

**I** Chemicals

Crop rotation

1. **a). The implement from which the specimens where taken from:**

The specimens were taken from ox-plough/mould board plough.

***Award ½ mark for the correct answer = ½mark***

**b) Functions of each specimen:**

**L1** Cuts the furrow slice horizontally at a desired depth and pass it to the mould board**.**

**L2** Separates the cut furrow slices from unploughed land.

It stabilizes the plough to reduce sideways movement during ploughing.

**L3** Regulates/adjust the depth of ploughing.

It also reduces resistance to the pull made by oxen due to its rotating/rolling action.

**L4** Receives the furrow slices and inverts it to ensure proper coverage of the trash.

**L5** Provide attachment for the bottom parts of the plough i.e. landside, share and moldboard.

***Award 1 mark each for any one correct point = 1×5 = 5marks***

**c) The effects on ploughing if each of the following parts is worn out:**

**L1** Will not be able to cut the furrow slice

**L2** Will be able to separate the furrow slice from the unploughed land.

Unable to withstand thrust of the plough, making the plough unstable.

**L4** Poor inversion of furrow slice and poor coverage of trash.

**Award ½ mark for any one effect = 1×3 = 1½ marks**

**d) Maintenance practice carried out on L1, L2, and L4 to make them function effectively during ploughing.**

**L1** Sharpen or replace the share

**L2** Replace the worn out landside

**L4** Replace the worn mould board

***Award 1 mark each for any one correct maintenance practice = 1×3= 3marks***

1. **a) Common functions of both specimens in the farm machinery:**

Reduce the rate of wear and tear of the moving parts

Reduce heat created by the moving parts by reducing frictions

Acts as a coolant by carrying away some of the heat in the engine and moving parts

Prevents rusting of the metals.

Acts as a cleaning agent i.e. washes off dirt, soot and dust from metal surfaces.

Reduces noise as an engine parts move against each other.

***Award 1mark for any one correct mentioned point= 1×1=1mark***

**b)** **Parts of the machine where each specimen can be used:**

**Y1** piston rings, gear box, hydraulic system, clutch assembly, bearings, engine

moving parts, shock absorber.

**Y2** Bearings, chains and sprockets, battery terminals, steering column, hinges, springs chuckles, links, hubs, pumps

***Award ½ mark each for any 2 correct parts in Y1 and Y2 = ½×4 = 2marks***

**c) Properties that make Y1 suitable for use in the parts stated in (c) above.**

Has low viscosity

Has a high flask point

Has high relative density.

Has ability to pour i.e. has low pour point and flows freely.

It has good body i.e. thick enough to prevent contact between two moving.

Good film strength i.e. it’s able to resist pressure.

It has a cleaning properties i.e. has detergent quality.

***Award 1 mark for any four points each = 1×4 = 4marks***

**d) Possible contaminants of Y1**

Dust which passes the air cleaner and crank case breather

Products of combustion like water and carbon

Product of compression e.g. acids on metallic parts

Unburnt fuel due uncompleted combustion

Metallic particles as a result of engine wear and tear.

Moisture produced as a result of condensation

Acids which are formed when oil decomposes

***Award 1 mark for any three points each = 1×3 =34marks***

**END**