**JINJA JOINT EXAMINATIONS BOARD**

**MOCK EXAMINATIONS 2019**

**AGRICULTURE 515/3**

**DRAFT MARKING GUIDE.**

1. **a) Method of pollination**

A-Wind pollinated flower

B-Insect pollinated flower

**b) Reason for the method of pollination**

A-Small/round, circle to reduce their weight so that they can be blown by wind.

-Smoothness reduces air resistance and hence blown by air easily.

B-large, circular and spiky. The spiky surface easily attaches on the insects/stigma for easy pollination. The large size of the pollen provides a large surface area for attachment onto the insect.

**c) Give one advantage of each type of pollination in 1(a) above**

A-reliable for uncommon species members

B-leads to genetic variation.

**d). Make a well labeled drawing of B in the space provided showing all the features:**

1. **Specimens L1 and L2 are common crop pests.**

**a)** (5marks)

|  |  |  |
| --- | --- | --- |
| Specimen | Mouth part | Descriptions of damage caused on crops |
| L1 | -Biting and chewing mouth part. | -Cuts the roots and stems of the crop/eats up the stems and root, crop fall. |
| L2 | -Piercing and sucking mouth part. | -Sucks sap from cotton boll  -Transmits he fungus nematospora gossypi that stains cotton lint.  -Shedding off of cotton bolls |

**b). Outline two cultural ways of controlling each specimen labeled**

L1

Crop rotation

Good soil preparation

Use of indigenous varieties

Through use of mesh screen

Rouging or pruning

Intercropping

L2

Plough deeply or hoe to expose the eggs

Up root all the plants after harvesting and destroy wild alternative hosts

Plough deeply or hoe to expose the eggs.

Uproot all plants after harvesting and destroy wild alternate hosts.

Remove plant and all its debris as soon as harvesting is over.

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c).Briefly explains how L1 and L2 use their mouth parts to feed.

L1

Have strong mandibles for biting and chewing of plant parts,

L2

Have styles/proboscis that they use to pierce the tissue and suck sap

**d). Using a hand lens, observe and make a labeled drawing of L2.**

**(Leave ½ a page)**

1. **a). Observe and make a labeled drawing of the contents as observed in the**

**measuring cylinder**.

**(Leave ½ a page)**

**b). Calculate the percentage composition of each layer in the soil sample**

Formula:

Coarse sand = (80cm3) = 80⁄200= 40%

Fine Sand = (15cm3) = 15/200= 7.5%

Silt = (15cm3) = 15/200= 7.5%

Clay = (90cm3) = 90/200= 45%

**c). Explanation of the observation in (a) above**

Soil is made up of particles of different sizes. The different soil particles are divided into three categories according to their sizes i.e. Sand, Silt and Clay.

Sand: these are big particles visible with naked eye. Coarse sand settles first at the bottom, followed by fine sand.

Silt: these are intermediate between sand and Clay. They settle on top of fine sand.

Clay: clay soil is too tinny in particle size and cannot be seen with naked eye. When clay soils are shaken in water, they show properties of both solids and liquids and are called collides. Humus settles on top of clay.

**4.**

1. **Observations:**

Specimen B (Reducing sugar)

**Presence (+ve test)**

Blue to green to yellow to orange/brown/red precipitate

**Absence (-ve test)**

Blue colour of benedict’s solution persists.

Specimen C

**Presence (+ve test)**

Blue to green to yellow to orange/brown/red ppt.

**Absence (-ve test)**

Blue colour of Benedict’s solution persists.

1. Deductions:

Specimen B

Reducing sugar present.

Specimen C

Non-reducing sugar present.

b) Explain your observations in (a) above.

There was a complete change in color change from blue to green to yellow to orange /brown/red ppt. an indicator that much reducing sugars present.

c). i. **State your observations**

Blue to green to yellow to orange/brown/red ppt. observed.

ii. **Give reasons for your observations in the experiment (c) above.**

There was a complete change in color change from blue to green to yellow to orange /brown/red ppt. an indicator that much non-reducing reducing sugars present.

**5.** **a).Suggest one method by which X is propagated.**

-Growing in the green house

-Direct in the field.

**b).Describe the steps involved in propagation of X**

-Seedlings raised in the nursery bed

-Transplant after two weeks

-Carry out spacing

-carry out thinning

-Carry out pruning

-Fertilizer application

-Pest and disease control

-Weeding

-Harvesting

-Storage

**c).Outline four economic importance of growing X over other crops**

**-**require small space to grow

**-**very profitable and has a fast of investment.

-fast growing

**d).Name some of the common pests of X.**

-ladybugs

-Whiteflies

-lygus bugs

-thrips

-cut worms

-beet army worms

-Tomato horn worms

-Aphids.

**e).Describe how X can be stored on the farm after harvesting to prolong its lifespan.**

-Store sweet pepper in plastic bags inside the refrigerator

-Blanch sweet pepper with boiling water and freeze them in air-tight bags or containers

for several months.

-Long term storage includes canning, drying or pickling.

**END**