JINJA JOINT EXAMINATIONS BOARD

MOCK EXAMINATIONS 2024

Principles and Practices of Agriculture

P515/3PRACTICAL

Marking Guide:

1.a). Differences between Q1 and Q2

Specimen Q1	Specimen Q2
Dark in color	Brick red/Brown color
Less Stick	Sticky
Loose	Compact
Humus present	Little humus

Award ½mark each for any correct difference = 4marks

b). Observations:

Q1.

Cannot be moulded easily.

Does not stick together/rings broke1.

Award 1 mark for any one observation = 2marks

Q2

Soil is sticky

Ring is formed

Can be moulded easily

Award 1 mark for any one observation = 2mark

c). Conclusions

Q1

Less clay

A lot of organic matter

Has a mixture of different and big textural particles

Award 1 mark for any one observation = 2marks

Q2

Has fine clay particles

Has little organic matter

Award 1 mark for any one observation = 2marks

d). Which of the two specimens is best suited for crop growth.

Specimen Q1 – Top soil/loam soil

Award 1 mark for any one observation = 1 mark

e). Other characteristics of specimen

High water holding capacity (poorly drained)

Expands when wet and cracks when dry.

High capillarity.

Rich in nutrients.

Award 1 mark for any one observation = 1 mark

Total marks for Q1 = 10marks

2.a). You are provided with the following specimens which are used in harvesting of honey. Give the function of each specimen.

M. Produces smoke which calms down bees and reduce sting.

N. Used to cut off ripe honey combs during harvesting.

O. Protects bee keepers' body from bee sting.

P. Removing bees from the ripe honey combs.

Q. For protecting hands during honey harvesting.

Award 1 mark each for any 2 correct functions = 2marks

(b). Using observable features, state how specimen M and N are adopted to the above function.

M

Has bellow for pumping smoke into hive.

Has handle for grip during operation.

Has nozzle to exit smoke into hive.

Has combustion chamber where dry materials are put.

Has top cover to cover the combustion chamber.

N

Has sharp edge for cutting honey comb

Has wooden handle for holding it while cutting honey comb.

Award 1 mark each for any one adoption in M and N = 2marks

(c). Describe how specimen M is used in honey harvesting.

Open the top cover.

Put burning materials with smoke into combustion chamber.

replace the top cover
Press the bellow to generate pressure to release smoke out.
Apply smoke coming out through the vent into the hive to suffocate the bees.
Award 1 mark each for any 4 descriptions = 4marks
d). How can the efficiency of specimen M be increased for honey harvesting?
Remove dirty materials from the chamber
Replace broken handle
Replace worn out bel low.
Replace top cover.
Clean the outlet and inlet pipe using a strong wire
Award 1 mark each for any 2 efficiencies = 2marks
Total marks for Q2 = 10 marks

3 a). Structure is barbed wire fence.
Award 1 mark for any one correctly named structure = 1mark
b). Procedure:

- Bush is cleared
- Corners where the king posts are to be fixed are then located
- Straight lines are made with a string from corner to corner
- The spot where the standards are to be fixed are marked 5 meters apart.
- Pegs are driven at the marked points using a mallet
- Holes are dug using a hole digger.
- Two holes are dug from the corner posts on either side to fix the struts/supports/brace.
- King/corner posts are fixed in the holes followed by the two brace posts and the soil firmed by ramming it with a piece of wood.
- Other posts are then fixed along each fence line.
- Using the stapples and hammer, fix the barbed wire on to the posts.
- Start with the lower one ,4-5 strands(lines) of wire using a wire strainer

Award 1 mark each for any 8 correctly stated steps = 8 marks

c). Give the uses of the farm structure.

- Encourages rotational grazing.

- Allows mixed farming to be practiced.
- Prevents intruders who may destroy or steal farm produce
- Allows isolation of animals for specific reasons eg sick animals.
- Helps to ensure efficiency in the use of land.
- Reduces boundary disputes.
- Controls water points for livestock.
- Adds beauty to the farm,
- Facilitates grouping of animals according to age for easy feeding.
- Reduces labour requirements in grazing.
- Minimizes spread of diseases and parasite, restricting wandering cattle from other farms.

Award 1 mark for any one correctly stated use = 1 mark

Total marks for Q3 = 10 marks

4. a).

TEST	OBSERVATION	CONCLUSION
i). To $2cm^3$ of solution A add 3 drops of iodine solution.	Solution retained the brown color of iodine solution.	Starch absent
ii). To $2cm^3$ of solution A add 1cm3 of Benedicts solution and boil.	Solution retained blue color of benedicts.	Reducing sugar absent.
iii). To $2cm^3$ of solution A add $5cm^3$ of dil. NaOH solution followed by copper sulphate solution.	Solution turned purple	Protein present.

Award 1 mark for each correct observation and conclusion = 06marks

b). i). The mixture turned milky/ turbid solution formed. =1 ***mark***

ii). The mixture turned clear/Turbid solution turned to colourless/clear solution. = ***1 mark***

c). What was the purpose of maintaining the mixture A and B at 40^0C?

ark

ds

in (a)

more

than 60%, which is the minimum percentage recommended for suitability.

Total marks for Q5 = (10 marks)

CONFIDENTIAL:

The teacher(s) concern should prepare and provide each candidate with the following specimens below. Great care should be taken that the information does not reach the candidates directly or indirectly. Where a specimen is to be shared, the invigilator (s) should ensure students do not over crowd around the specimen and that they take turn one at a time.

1. Top soil/Loam labelled Q1
   Subsoil/clay labelled Q2
2. Bee smoker labelled M
   Hive knife labelled N
   Overall labelled O
   Bee brush labelled P
3. Hammer labelled B1
   Stapples/U- nails labelled B2
   String labelled B3
   Wire strainer labelled B4
   Barbed wire labelled B5
   Peg labelled B6
   Hole digger labelled B7
4. Protein solution (Egg albumen) labelled A
   Pepsin enzyme labelled B
5. Provide a seed lot of 70 maize seeds, of which 48 have germinated and 22 have not germinated, labelled X

END