Paper Two

Item 1.

AIM: An experiment to determine the drainage of soil samples A and B. (P1)

Hypothesis: Soil sample B is more suitable for growing bean variety because it has large particles that drain much water. (Award if soil samples are mentioned) (P1)

Variables: Controlled Variables (CV) (P1)
—(Volume of soil measured, volume of water measured, time taken for the set up to stand)

List of requirements: —2 measuring cylinders (100mls)
— 2 Plastic beakers (250mls)
- Funnel, filter paper, stop clock, soil samples A and B, water. (P1)

Relevance (C1) Correctness (C1)
Coherence (C1) Management of var (C1)
M^3

Procedure:
(i) Measure 25ml of each of the soil samples A and B using a dry measuring cylinder.
(ii) Plug a filter funnel with a filter paper and fill it with soil sample A.
(iii) Place the funnel with the soil on top of a measuring cylinder.
(iv) Repeat procedure (i – iii) with soil sample B.
(v) Pour 25ml of distilled water onto the soil and start the stop clock at the same time and leave to stand for 20 minutes.
(vi) When the water stops dripping, stop the clock. ~~and record the time taken~~.
(vii) Record the volume of water collected in the measuring cylinders from soil samples A and B.

Data / Results.

Soil sample	Volume of water added	Volume of water collected (cm^3)
A	25	5 - 6
B	25	8 - 10

Appropriate D2

Conclusion D2

Analysis of results + Conclusion + Recommendation

Soil sample A.

Volume of water added = 25 cm^3.

Volume of water collected = $\frac{5+6}{2}$ = 5.50 cm^3.

Volume of water retained = Volume of water added - Volume of water collected

= 25 cm^3 - 5.50 cm^3

19.50 cm^3

Analysis: AR - 02

Soil sample B.

Volume of water added = 25.00 cm^3.

Volume of water collected = $\frac{8+10}{2}$ $\frac{18}{2}$ = 9.0 cm^3

Volume of water retained = Volume of water added - Volume of water collected

25 cm^3 - 9 cm^3

= 16 cm^3

Explanation of results.

Soil sample A has small compacted particles; that drain less water and retains more water.

Soil sample B has large particles that are less compacted; that drain more water and retain less water hence less water logged.

Conclusion: Soil sample B drains more water than soil sample A.

AR - 01

Recommendation: I recommend the farmer to plant his beans on the plot from which soil sample B was obtained. AI2 — (01)

Item 2.

(a)

1 (a) Specimen with wings ---go to 2
(b) Specimen without wings --- P ~~(Termite)~~

2 (a) specimen with short antenna --- Q
(b) Specimen with long antenna --- O.

I = (02)

(b) Q (Bee)

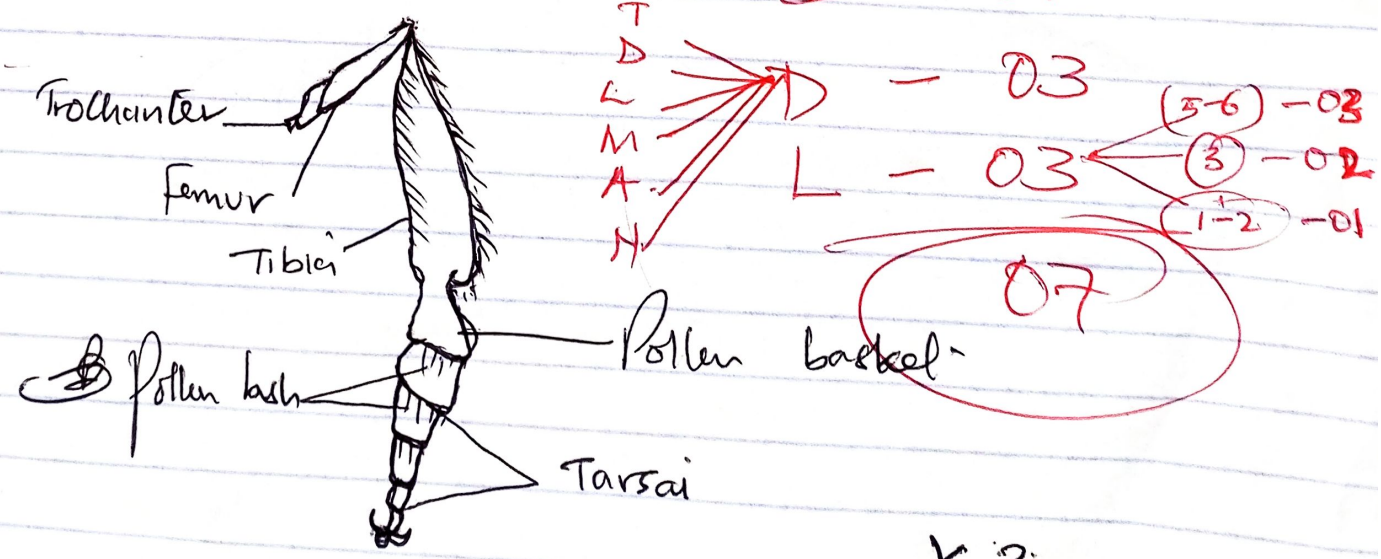
~~Has~~ The hind leg has a pollen basket ~~that~~ carry nectar. U1 (O✓ - F✓)

- Has hairy body for attachment of pollen grains to be carried from one flower to another U1
- Has wings (2 pairs) for flying from one flower to another. U1.

(Award any 3 correct points)

U = (06)

(c) A drawing showing the hind limb of specimen Q



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