# 'O' LEVEL MARKING GUIDE
# AGRICULTURE
## Paper 2

1. (a) You are provided with soil samples **A** and **B**. Wet a small sample of **A** and rub it between the index figure and thumb and describe your observation. Repeat the same procedure with soil sample **B.** (02 marks)

**A**:

Observation : *Its sticky*$^{e}$ *and forms Ribbon* $^{e}$

**B:**

Observation: *Its gritty*$^{e}$ */ rough and does not form ribbon*$^{e}$.

(b) Pick a small sample of **A** and rub it between the thumb and index figure. Describe the feeling. Repeat the same procedure with sample **B.** (02 marks)

**A**: *Feels smooth*

**B**: *Feels gritty / coarse / rough*

(c) To 40cm$^3$ of **A** in a dry measuring cylinder, add 40cm$^3$ of clean water and stir the mixture thoroughly until the two are fully mixed. Allow the mixture to settle and record the volume of the mixture. Repeat the same procedure with sample **B** and record your results in the table below. (03 marks)

| Sample | Volume of soil used | Volume of water used | Expected volume of mixture | Actual volume of mixture |
|---|---|---|---|---|
| A | *40cm$^3$* | *40cm$^3$* | *40 + 40e = 80cm$^3$* | *60 – 64cm$^3$ = 1 ½ mark* |
| B | *40cm$^3$* | *40cm$^3$* | *40 = 40 = 80cm$^3$* | *66 – 69cm$^3$ = 1 ½ mark* |

(i) Calculate;

Volume of air in **A** and **B**. (02 marks)

**A**: *80cm3 – 60, 61, 62, 63, 64* $^{e}$

*= 20, 19, 18, 17, 16cm$^3$* $^{e}$ *= 1*

**B**: *80cm$^3$ – 66, 67,68, 69* $^{e}$

*= 14, 13, 12, 11 cm$^{3e}$ = 1*

(ii) State the factors that affect the amount of air in soil. (02marks)

- *Soil texture / size of soil particles*
- *Soil structure*
- *Soil drainage*

- *Number of pore spaces*

  *Any 2 points 1 mark @ = 2 marks*

(iii) Give the role played by soil air in crop production. (02 marks)

- *Provides water / air needed in seed germination*
- *Provides water / air needed root respirations*
- *It is used by soil living organisms in respiration*

  *Any 2 points 1 mark @*

  *2 x 1 = 2 marks*

2. (a) Specimen **C, D, E** and **F** are weeds, classify it according to life cycle. (02 marks)

*C – Perennial weed*[e] *E - Perennial weed*[e]

*D - Annual weed* [e] *F - Perennial weed* [e]

(b) Describe the adaptations of each weed to its nature of life. (04 marks)

***C:*** *Has numerous or many Rhizomes that are resistant to harsh environment / resistant to control.*

***D****:* *Produces may hooked seeds that can be easily dispersed / many seeds to increase chance of survival*

***E****:* *Has bulbs and bulbs that can tolerate harsh soil conditions to sprout or grow*

***F****:* *Has Rhizomes capable or able to tolerate harsh conditions to grow or sprout*

(c) (i) Examine each and state the method of propagation. (02 marks)

***C:*** *Rhizomes*

***D****:* *Seeds*

***E****:* *Bulbs and bulbils*

***F****:* *Rhizomes and bulbs*

(ii) Give four cultural practices that can be used to control the weeds. (02 marks)

- *Flooding gardens e*
- *Mulching gardens e*
- *Early planting of crops e any 4 ½ mark @*
- *Proper spacing of crops e*
- *Plant weed free seeds e*
- *Reject crop rotation because there is no parasitic weed.*

3. (a) Specimens **G, H, I** and **J** are used to perform work at the farm. Give one general name given to them. (½ mark)

*Garden tools and equipment / card tools e = ½*

(b) State **one** function of each of the tool in making a nursery bed. (04 marks)

*G - Cultivates deep to remove weeds or raises soil to improve aeration*

*H - Digs out rhizomes from nursery bed area = 1*

*I - Supplies / applies water to the nursery bed to soften the soil*

*J - Sprays / applies herbicides to kill weeds from the nursery bed site / area. = 1*

(c) (i) Identify the three parts labeled **S**, **T** and **U** that make **J** more suitable for its work. (1½ marks)

*S = Nozzle = e ½*

*T = Trigger = e ½*

*U = Container / tank = 2 ½*

(ii) Describe the steps followed to use **J** appropriately on seedlings in a nursery bed. (04 marks)

- *Put on protective clothes or wear*
- *Add water to **J** to the required level or amounts*
- *Add the required amount of pesticides to water*
- *Stir the mixture thoroughly until there its uniform distribution*
- *Put J on the back and apply the pesticide*

4. (a) Specimens **K, L, M** and **N** can be used to perform various farm activities. Identify each of the specimens. (02 marks)

**K**: *Cross cut saw / rip saw*

**L**: *Hack saw*

**M**: *Tape measure*

**N**: *try square*

(b) State **one** structural differences between **K** and **L** , **M** and **N.** (02 marks)

**K** and **L**

*K has a big blade while L has a small blade*

*K has fewer teeth per area while L has more teeth per area*

*K has big teeth while L has small teeth*

**M** and **N**

*M has a long tape while N is short in nature*

*M is straight while N has a right angle.*

(c) Describe the adaptations of **K** and **M** to their work. (02 marks)

**K**: *Has a handle for pondering grip during work*

*Has teeth for cutting wood*

**M**: *Has calibrated to ensure it carries out measurement of length*

*It has a plastic case that stores or protects the tape*

(d) Give one similarity between **K** and **L, M** and **N**. (02 marks)

**K** and **L**

- *Both have teeth*
- *Both have handles*
- *Both have metallic blades*

**M** and **N**

- *Both are calibrated*

5. (a) Specimens **O, P, Q,** and **R** are livestock management equipment. State one practice performed by each. (02 marks)

**O**: *Identification e = ½*

**P**: *Dehorning e = ½*

**Q**: *Closed castration or castration = e = ½*

**R**: *Closed castration or castration = e = ½*

(b) Describe the procedure of using **P** to perform its functions. (03 marks)

- *Restrain the animal in a crush*
- *Heat P in fire or gas until it is red hot*

- *Stamp P on the less valuable part of the animal*
- *Spray fly repellant on the area branded*
- *Release the animal*

  *The first 3 in order 1 mark @ 3 x 1 = 3 marks*

(c) What is the functional relationship between specimens **Q** and **R**?

(01 mark)

- *Both are used in closed castration or castration*

d) Explain one importance of each of the practice carried out by **specimens O, P** and **Q**. (03 marks)

**O**: *For easy record keeping*

*For easy identification of animals*

**P**: *Reduces injuries to other animals*

- *Encourages uniformity in herd*
- *Ensures that more animals fit in available space*

**Q**: *Ensues that animals grow fast*

- *Ensures production of good quality meat*
- *Controls breeding on the farm*

**END**