ALL THIS YEAR MOCK

RUMMERS FROM CHITIPA TO SANJE

AGRICULTURE

PRACTICAL

Sir **GODFREY** MALATA CHIPASULA SEC.SCHOOLFOR MORE 099297 2544 WHATSUP

Many thanks my brother john malata from kawale sec.school, my mom and big bro Law-rent MALATA Management of CHIPASULA sec.school.

SIR GODFREY MADAM RITA

FROM **FROM EGYPT**

CHIPASULA SECONDARY SCHOOL

FOR MORE 099297 2544 WHATSUP

Sir **GODFREY** MALATA CHIPASULA SEC.SCHOOLFOR MORE 099297 2544 WHATSUP

1. You are provided with five different planting

Materials

P (Cassava stem),
Q (Bean seed),
R (Irish potatoes)
S (onion)

a) Identify the samples P,Q,R, and S

- P is a cassava stem
- Q is a bean seed
- R is called Irish potato (or European potato)
- S is onion

b) Which of the four planting materials are propagated by a sexual means and which ones are propagated by sexual means? I. Asexually propagated are: ➢ Cassava stem (P) ➢ European potato (R) II. Sexually propagated are:

- Bean seed (Q)
- Onion (S)

c) Give any four advantages of propagation by vegetative means

- Yields are obtained easier and faster than seed propagated plants because vegetative propagation eliminates the problems of dormancy and reduces the juvenile period of plants.
- Seedless crops such as bananas can be produced easily through vegetative propagation.
- Cross-based plants can be maintained in heterozygous condition indefinitely.
- Pollination agents, which can fail to perform successfully, are not required.
- The hazard of fertilization are avoided
- The offspring are true to type because there is no mixture of hereditary characteristics.
- By budding and grafting it is easy to achieve all sorts of combination, e.g. different varieties of citrus, such as oranges and tangerines can be made to grow on a single stock.

d) State any one characteristic of a good planting material.

- Should be pure to type

e) What are any four advantages of propagation by seed?

- It is a sure method of crop improvement since cross-pollination results in variability.
- Self-pollination results in offspring, which help in production of pure lines for certain characters.
- It is a cheap method of propagation.
- Seed embryo remains more viable than buds when stored.
- Seeds are more easily transported to different areas
- Self-pollination gives rise to offspring, which are like the parents.

f) Draw and label any two parts of the sample P

g) Calculate the plant population per hectare of specimen Q which is planted on a 1 ha land, with ridges spaced 90cm apart, planting two seed per station and planting at 15 cm apart.

2. You are provided with specimen □ (onion).

a. Name the specimen O

- Sample O is onion

b. Draw and clearly label any three parts of specimen O

c. Name the planting material used for propagating O.

- It is a bulb

d. What are two advantages of propagating using the method mentioned in (C) above?

- Pollination agents, which may fail to perform successfully, are not needed.
- The offspring are true to type for there is no mixture of hereditary characteristics

e. Mention four types of grafting.

- Whip or tongue grafting
- Cleft grafting
- Bark grafting
- Approach grafting
- Notch grafting
- Side grafting

f. Give any five reasons for carrying grafting in plants.

- Helps to propagate clones that cannot be propagated by other means.
- Facilitates the changing of the top of the tree from being undesirable to desirable.
- Grafting helps one to obtain special plant forms, e.g. tree roses.
- Grafting maybe employed to repair damaged trees.
- Makes the growing of more than one type of flowers or fruits on one tree or plant possible.

3. You are provided with specimen

- x (an onion)
- Y (a banana fruit).

a. Name the specimen X.

- X is an onion

b. Draw and label any three external parts that you see on the specimen.

i. Take the specimen X you are provided with and cut it with a knife longitudinally. Draw and label any two internal parts that you see.

ii. What type of propagation is common in specimen X?

- Vegetative propagation iii. Mention any two advantages of the type of propagation you have given in (ii) above
- Pollination agents, which may fail to perform successfully, are not needed. The offspring are true to type for there is no mixture of hereditary characteristics.

i. Name the specimen Y.

- Y is a banana fruit.

ii. Draw and label any two external parts of specimen Y.

iii. Take the specimen Y provided and cut it with a knife or razer blade longitudinally. Draw and label any two internal parts that you can see.

i. What type of propagation is common in specimen Y?

- vegetative propagation ii. Mention two other plants or crops that can propagate like specimen Y.
- pineapple
- sweet potatoes

c. What name is given to asexual reproduction in flowering plants?

- It is called vegetative reproduction

4. You are provided with specimen

- S (bean seed)

a. Identify the specimen S
   - Bean seeds

b. Draw the specimen as you see it

c. On your diagram label four important parts for growth

d. State any two functions of any one party you have labeled.
   - Micropyle : as mall hole near hilum
   - It is the place where most of the water is absorbed before germination
   - A tiny whole which allows air to pass through for respiration of the embryo

e. What is germination?
   - The process by which seeds begin to develop into new plants

f. Mention four conditions necessary for germination to take place.
   - Viable seeds
   - Water/moisture
   - Oxygen/air
   - Suitable temperature

g. Describe the two main types of germination that you know.
   - Hypogeal germination: where cotyledon remain below ground throughout the stages of the germination. e.g.in maize
   - Apogeal germination: in which cotyledons are lifted above the first leaves of the newly emerg

5. You are provided with the following labeled specimens. Use them to answer questions that follow.

- M (bean flour/bean meal)
- N (elephant grass).

a. Identify the classes of the livestock feed
   - M-concentrate
   - N-roughage

i. Which specimen is suitable for ruminants? ➢ N-roughage/elephant grass ii. Give a reason for your answer

- ➢ Able to digest cellulose

b.

i. Which group of specimen can be fed to beef cattle three weeks before slaughtering?

- ➢ M-bean flour ii. Give areas on for your answer
- ➢ Because it is rich in proteins and used for body building muscles /fresh/meat

c. State three reasons for feeding livestock with specimens

- ➢ For maintenance of their bodies
- ➢ For production
- ➢ For production of products such as, eggs and milk

6. You are provided with the following specimens.

- **K** (Bidens pilosa i.e Black jack)
- **L** (Cynodon, dactylon i.e Star grass or Cough grass)
- **V** (Cypress distans)
- **W** (Oryza longstaminata i.e mpungadziwe)

a. Identify K, L, V and W

- ➢ **K** (Bidens pilosa i.e Black jack)
- ➢ **L** (Cynodon, dactylon i.e Star grass or Cough grass)
- ➢ **V** (Cypress distans)
- ➢ **W** (Oryza longstaminata i.e mpungadziwe)

b.

i. What letter stand for annual weed?

- ➢ **K** ii. Mention four methods of seed dispersal.
- ➢ Animal dispersal
- ➢ Wind dispersal
- ➢ Explosive mechanism

- Water dispersal

c. Mention any four uses of weeds
   - Weeds are human food e.g Amarathus hybridus
   - Weeds are feed and shelter for animals
   - Weeds are source of drugs, for many weeds contain alkaloids and chemicals that are effective medicine and are required for public healthy.
   - Weeds are used in agriculture to provide ground cover, which protect soil from erosion by rain and also add organic matter to the soil leading to improved soil structure.

d. Describe three true acquatic weeds that you know.
   - Floating hydrophytes: if they are in contact with water and air only e.g water lettuce.
   - Emergent hydrophytes: if they are in contact with substrate water and air e.g white water lily.
   - Submergrd hydrophytes: if they root in substrate but do not emerge above the water e.g water weed.

e. Classify the four weeds into broad or narrow leaved
   - Black jack –narrowed leaved
   - Oryza longistaminata- narrowed leaved
   - Cynodon dactylon- narrowed leaved

7. You are provided with animal product labeled

 M (milk)

a. Identify the product
   - It is milk

b. Mention any three by-products which can be produced from product M.
   - Cheese
   - Butter
   - water

c. Name any three farm animals which supply product M
   - Cow
   - Goat
   - Horse

d. Explain any two nutritional values of specimen M in the human body.
   - Provide proteins for body building and growth
   - Provide carbohydrates for generation of energy in the body.

e. Explain any three ways in which the quality of product M may be improved.
   - Feeding the animal a lot of concentrates
   - Stall feed the animal to restrict movement and reduce energy loss.
   - Include pasture legume in the feed so as to increase the supply of protein

f. Describe any three ways in which a farmer may stimulate the product M
   - Using conditioned reflex by taking the animal for milking under some environment each milking time
   - Rubbing teats on animal's udder with a clean piece of cloth dipped in warm water.

8. You are provided with specimen labeled

 L (nsenjere or star grass)

a. Identify the labeled specimen
   - It is elephant grass, napier grassor star grass

b. To which group of livestock feeds does this specimen belong.
   - It is Roughage

c. State any two characteristics of feeds which belong to the group mentioned above.
   - It is high in fibre content
   - It supplies fewer nutrients per unit mass

d. Explain any two advantages of growing specimen L together with Leucaena.
   - It inreases total biomass in the feed which satisfy hunger in the animal.
   - It provide the much needed fibre which help in peristalsis

e. Give two examples of pasture which can be used in a tobacco rotation to control cell worms.
   - Katambora grass
   - Emalo love grass

9. A farmer has 10 hectares and has a choice of growing either more maize or ground nuts. The following information is available for use in decision making.

	Maize	Groundnuts	Beans
Yield (kg/ha)	6,000	2000	2,500
Price(Kwacha/kg)	30	50	40
Cost of seed/ha	K500	K1200	K1,000
Cost of fertiliser/ha	K2,400		K2,000
Depreciation of *nkhokwe*/year	K500	K500	K500

a. Calculate variable cost per hectare for maize, ground nuts and beans.

- Variable cost for maize

  K500 + 2400 = K2900

- Variable cost for G/nuts

  = K1200

- Variable cost for beans

  K1000 + K2000 = K3000

b. Which crop between maize and ground nuts would a farmer be encouraged to increase hectares? Show your calculations.

- Maize

  = K30 X 6 000 – (K2 900 + K500)

  = K180 000- K3 400

  = K176 600

c. If the farmer wanted to substitute beans for ground nuts, what advice would you provide? Show your working.

- Profit from beans in comparison to that of ground nuts

= K40 X 6 000 – (K3 000 + K500)

= K240 000 – K3 500

= K236 500

The farmer has to be advised not to do the substitution since growing ground nuts is more profitable than growing beans

d. Explain one reason for considering depreciation when calculating profit.
   - It assist farmers in calculating profit where it is used as fixed cost

e. What two important variables cost may have been forgotten in the data?
   - Cost for pesticide
   - Cost for casual labour`

10.You are provided with specimen G, (which is a groundnut seed)

a. Draw and label any two external parts of the specimen G

b. Remove the testa (seed coat) and divide the specimen G into two parts.

   Draw clearly the divided G and label any three internal parts.

c. Explain any one function of the two external parts labelled in (a)

d. Mention one function of the three internal parts labelled (b).

11.You provided with five samples

- G (grass pastures)
- L (legume pasture)
- F (Crushed or fish meal)

- S (common salt or NaCl/sodium chloride)
- M (mgaiwa or maize meal) which can be used as feed for animals.

a. Identify the samples of pastures G, L, F, S and M.
   - G (grass pastures)
   - L (legume pasture)
   - F (Crushed or fish meal)
   - S (common salt or NaCl/sodium chloride)
   - M (mgaiwa or maize meal

b. Which of the five sample would be most suitable for grazing?
   - ➢ The most suitable is the legume pasture

c. Give a reason for your answer in (b) above
   - ➢ The legume is very nutritious, for it contains a lot of nutrients such sa protein and animals will only graze on plants.

d. In what one way would maturity of sample G affect the quality of the feed?
   - ➢ The maturity of G (grass pature) would result in having a lot of fibre therefore lowering its digestable.

e. Explain one best way of conserving sample L.
   - ➢ Conserve in the form of silage.

f. Mention three importance of drying crops.
   - ➢ Prevents germination of seeds

- Retains maximum quality in the grain or forage by preventing deterioration
- Reduces moisture content in order to prevent microbial infestation and insect attack.

g. Give four reasons why crop storage aeration is necessary.

- Lower grain temperature
- Equalize temperature through the bulk of the produce.
- Remove unpleasant orders odors and fumigants.
- Reduce moisture content slightly in the storage. h.

i. Mention any four reasons for giving S to layers

- S (NaCl) is beneficial in counteracting cannibalism and feather picking
- S (NaCl) improves the growth of the layers
- S (NaCl) improves eggproduction
- S (NaCl) improves appetite to layers for them to eat more food and be healthy.

ii. State two reasons for giving a small amount of sample F to layers

- Fish meal or crushed fish provides calcium, phosphorus, protein, and calciferol for strong egg shells.

- Fish meal or crushed fish provide appetite for layers to eat more food and lay many eggs

iii. State any three reasons for feeding layers green vegetables apart from providing sample S.

- Green vegetable provide calcium to avoid rickets
- Green vegetable contain calcium to avoid rubbery beaks of layers
- They contain calcium for avoiding soft egg shells and drop in egg production

i. Explain one problem that layers feeding only on M would develop.

- They would have weak bones and egg formation since M mainly provides energy (carbohydrates) and no calcium. Mgaiwa contains mainly carbohydrates, fats, vitamins and proteins. i.e a energy concentrates.

ii. How can the problem in (i) above be corrected?

- Provide the chickens with protein concentrates to give amino acids for growth, e.g legume grains and their by product, meat, fish meal, minerals and vitamins

12. Study the specimen and carefully and answer the following questions

- R (maize seed) and
- T (groundnut seed)

a. identify each of the specimens provided

- R (maize seed)
- T (groundnut seed)

b. Name three varieties of specimen T

- Chalimbana
- Mani pinta
- RG 1

c. Which of the specimen provided would be more suitable for improving the productivity of sand soils?

- It is specimen T (ground nuts)

d. Give two reasons for your answer in c (i) above.

- T, which is ground nuts. It is able to fix nitrogen in the sandy soils for it has nodules, which with the help of bacteria, are able to fix nitrogen.

e. With five examples each, mention two groups of improved maize varieties found in Malawi

- Composite maize : CCA, CCC, CCD, UCA AND TUXPENO

- Hybrid Maize : MH12, NSCM 41, MH18,MH17 and SC 307.

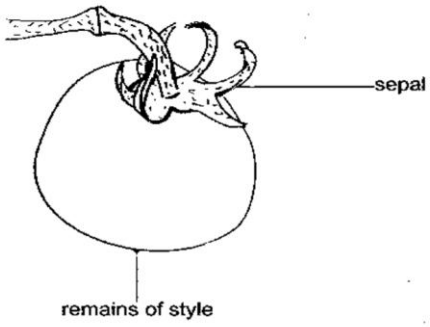
13.You are provided with samples X and Y (two tomatoes)

a. Name any four varieties of tomatoes
   - Roma VF
   - Marglobe
   - Homestead
   - Money maker

b. Mention any two diseases of tomatoes and their causes
   - Bacteria wilt caused by abacteria
   - Leaf blight caused by a fungi

c. Draw and label any two external parts of sample X (tomato) provided

(c)



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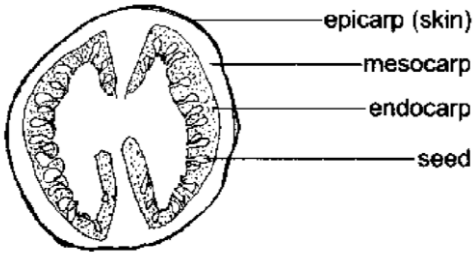
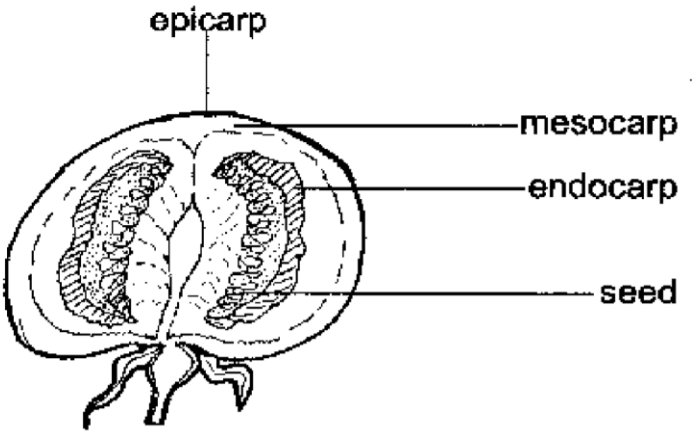
d. Cut the tomato with razor blade transversely. Draw and label any four parts of the cut sample X (tomato)

(d)



e. Cut sample Y (another tomato) provided with a razor blade longitudinally. Draw and label any four parts of the tomato that you have cut.

(e)



14.You are provided with the specimens M and N, use them to answer questions that follows.

- M = Maize

- N = Cassava

a. Identify the specimen M and N

   - M = Maize
   - N = Cassava

b. State any two processing activities through which specimens M and N undergo in readiness for storage.

   - Maize seed are sun-dried for storage
   - Cassava is peeled and sun died for storage

c. Explain any two conditions which are required in the storage of specimen M.

   - It must be dry to prevent formation of molds
   - It must be clean to avoid multiplication of pest

d. Explain any two ways in which specimen N is important in terms of food security

   - It can be processed into cassava flour for home use as food.
   - It can be used while flesh by boiling it for food.

e. i. State the nutritive value of specimen N.

   - carbohydrates

f. Give any two products obtained from processing specimen N.

   - Cassava flour

- Starch

15. You are provided with five different planting materials

- P (sugarcane stern),
- Q (maize seed)
- R (sweet potato vine)
- S (mango fruit)
- T (pumpkin seed)

a. Identify the samples P, Q, R, S and T.

- P (sugarcane stern),
- Q (maize seed)
- R (sweet potato vine)
- S (mango fruit)
- T (pumpkin seed)

b. Mention any one characteristics of good planting material.

- It must be viable

c. Which of the five planting materials are propagated by seed?

- Maize seed
- Mango fruit
- Pumpkin seed

d. Give any two advantages of propagated by seed.

- Seeds are relatively cheap
- Seeds produce offspring that are different from their parents, leading into having some offspring containing better characteristics than the parents

e. Give any two disadvantages of propagated by seed.

- It requires a well prepared seed bed on which to sow the seed
- It requires a long juvenile period before it starts producing

f. Draw and label any three parts of the sample P

g. Calculate the plant population of specimen Q which is plant on 90cm apart ridges, planting three seeds per station and planting at 0.9m apart. The area to be planted is 1 ha.

16.You are provided with two specimens labelled

- X (mpiru)
- Y (tomato fruit).

a. Identify the specimens labeled X and Y.

b. i. Cut specimen Y longitudinally. Draw and label any three parts.

c. Mention one function of each of the parts labeled in question b (i).

d. (c) i. Explain the main problem of marketing the specimen labeled X and Y design a four year crop rotation for this farmer.

e. Explain the importance of including peas in the rotation in question c (i)

f. (d) i. Explain the main problem of marketing labeled X and Y

g. Explain any solution to the problem in question d (i)

17.You are provided with samples (elephant grass) and Z (lime)

a. identify the three samples

b. Among the three samples which one has the greatest energy value?

c. Name the sample that can be an additive feed to chickens that lay eggs.

d. List two other additive feeds that can be supplied to chickens apart from the one mentioned (c) above.

e. Mrs Kanchere plans to graze her twelve cattle on a 1.5 hectare of star grass. However during the wet season there is usually more grass than the number of animals that can feed on them.

f. If you were a farmer what would you do in this situation?

g. State any five reasons for your answer in (i) above.

h. Explain any two ways in which seasonal production of star grass affects its quality and quantity.

i. (f) What four factors should be considered.

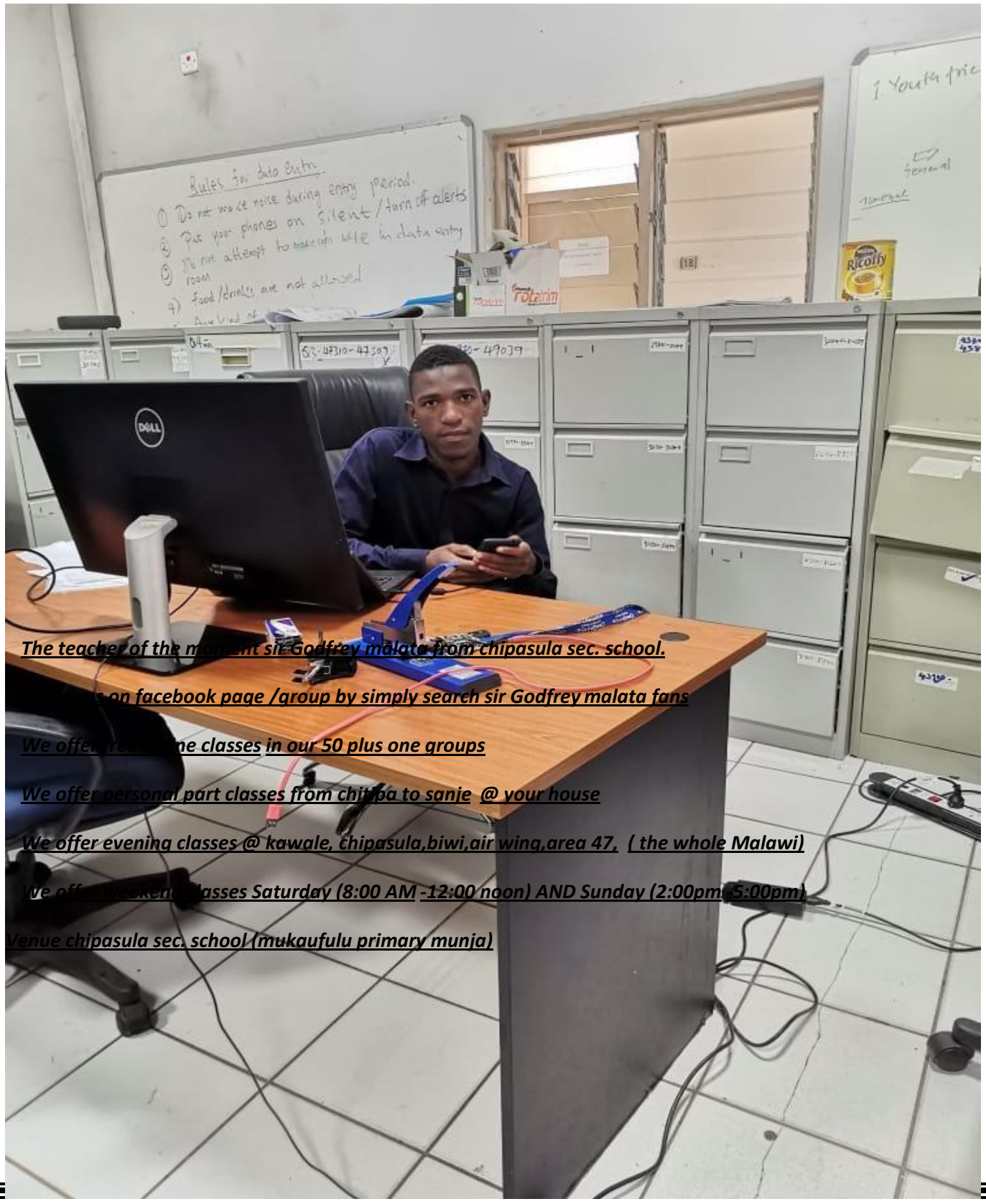
AGRICULTURE ESSAY

1. Describe any **five** types of soil structures (10 Marks)

2. Explain ant **five** ways in which soil texture can be maintained and improved (10 Marks)
3. Describe any **five** physical properties of the soil (10 Marks)
4. Describe any **five** factors that affect soil pH (10 Marks)
5. Describe any **five** advantages of sexual propagation (10 Marks)
6. Using a well labelled diagram describe the following processes
    A. Layering
    B. Budding
    C. Grafting (10 Marks)
7. Describe **five** advantages of asexual propagation (10 Marks)
8. Explain any **five** roles of essential plant nutrients in proper plant growth and development (10 Marks)
9. Describe any **five** ways in which essential plant nutrients are depleted in the soil (10 Marks)
10. Explain any **five** impact of weeds (10 Marks)

THE END

GOD IS WITH ME AND HELPING ME IN ANYTHING I DO



The teacher of the moment sir Godfrey malata from chipasula sec. school.

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Venue chipasula sec. school (mukaufulu primary munja)