'A' LEVEL MARKING GUIDE
AGRICULTURE
Paper 3

1. *(a) Specimen **A** is a concentrate feed given to laying birds to improve laying.*

*Observe and smell specimen **A** and identify from specimens **C, D, E, F** and **G** those that constitute **A.***
(02 marks)

Specimen B = e any 4 ½ @ = 4 x ½ = 2 marks

C/D e

E = e

F = e

G = e

(b) Give one reason for including each of the specimen identified in 1(a) above in constituting the feed. (04 marks)

B = provides energy that can be used in many body functions

C/D = provides proteins needed in egg formation / growth / body repair

E = provides proteins needed in egg formation / growth / body repair

F = provides minerals needed in egg formation / strengthening of bones

G = provides vitamins for health growth and being

Any 4 1 mark @ 4 x 1 = 4 marks

*(c) (i) Identify any four specimens from **B,C, D, E, F** and **G** that you may include in dairy meal. (02 marks)*

B = e

C/D = e

F = e

D = e 4 x ½ = 2 marks

(ii) Suggest the reasons for including each of the specimen in dairy meal. (04 marks)

B = provides energy or used in milk synthesis

C = provides proteins for milk synthesis / growth and repair

C= provides proteins for milk synthesis or grwothof repair

F = provides minerals needed in strengthening of bones / synthesis of milk 4 x ½ marks)

2. *(a) To 10cm^3 of soil sample **H** in a measuring cylinder add 1 spatula endful of Barium sulphate followed by 10cm^3 of distilled water and stir the mixture well using a string rod. Allow the mixture settle and decant the clear solution into a clean test tube. Add 4 drops of universal indicator to the solutions, observe the changes and record the pH of the solution.*

(i) Observation. (01 mark)

A green / light green ring is formed on the upper surface of the clear solution. (NB: Red – 1, Pink – 2, Orange – 3, Beige – 4, Yellow – 5, Lime green /light green – 6, Green – 7, Dark green – 8, Turquoise / light blue - 9, pale blue = 10, blue – 11, dark blue = 12, violet – 13, purple – 14, Pale green – alkali, light green – acidic.

*(ii) pH of **H** solution. (½ mark)*

its slightly acidic or its neutral

*(b) Repeat the above procedure in 2 (a) for specimens **I**.*

*(i) **I***

A yellow or light green ring is formed on top of a clear solution

*(ii) pH of **I** solution.*

Its slightly acidic

*(c) To 10cm^3 of specimen H on a petri dish, add 10cm^3 of specimen **J** and mix the two thoroughly. Add 1 spatula endful of Barium sulphate to*

the mixture and pour the mixture in a clean measuring cylinder. Add 12cm^3 distilled water and shake the mixture. Allow the mixture to settle and decant the clear solution into a clean test tube. Add 4 drops of universal indicator to the solution and record the observations and corresponding pH.

(i) Observation. (
A light green / lime green / yellow portion / ring / part forms in surface solution.

(ii) pH of solution. (½ mark)
Acidic

*(iii) Explain the effect of specimen **J** on soil sample **H.** (1 mark)*
It lowers the pH of the soil / increases acidity of soil.

*(d) Repeat the same procedure in 2(c) on soil sample **I** while replacing **J** with **K.***

(i) Observation.
Solution turns yellow or orange

(ii) pH of solution. (½ mark)
Acidic

(iii) Explain the significance of the experiment in 2(a) and 2(c) to a farmer.

- *Helps the farmer to decide on which crop to produce*
- *Guides a farmer in finding which type of soil amendment is needed*

*3. (a) Specimens **N, O, P** and **Q** can be used to make specimen **M.** Explain the role played by each in making specimen **M.***

N - Provides the herbage for making M

O - Increases the nitrogen / nutrient content of M

P - provides energy to the microbe during fermentation

Q - provides herbage for making M

*(b) Between specimens **N** and **Q** which one is more suitable for making **M** and why?*

N - provides much more nutritious herbage for making M than N

Its more succulent hence making good quality M

*(c) (i) What makes it hard for most farmers to use specimen **M** to feed dairy cattle. (02 marks)*

- *M can taint milk with its smell*
- *Making M requires more skills that most farmers do not have*
- *Materials (herbage) for making can be used as human food which farmers cannot easily give to feeding animals .*
- *Materials (herbage) for making can be used as human food which farmers can not easily give to feeding animals*
- *Making M requires more time which discourages farmers.*

Any 2 1 mark @ 2 x 1 = 2 marks

*(ii) How is specimen **Q** adapted to its environment? (02 marks)*

- *Has fibrous root system that utilizes or uses the little available soil moisture on soil surface.*
- *Produce numerous seeds for increasing chance of survival.*

Any 2 1 mark 2 x 1= 2 marks

*4. (a) Specimens **R, S, T** and **U** are farm structures that are important in livestock management. State one importance of each. (04 marks)*

R *: Chicken draw feeds / feed from it*

S *: Chicken draw water / drink water from it.*

T *: It houses bees / colony / provides shelter to fees.*

U *: Birds / chicken lay eggs in it / protects the eggs laid by chicken*

*(b) Describe **one** feature that makes each suitable for its function.*

R *: Made up of wood which is light to lift*

- *Has a handle that provides group when lifting it*
- *Has a container that holds or keeps feeds*

S *: Has a water container that holds water*

T *: Has a top cover that prevents water entry into the hive*

- *Has bee entrance to allow entry and exit of bees*
- *Has top bars on which bees build combs*

U *: Has litter or straw that prevents breakage of eggs.*

*5. (a) Specimens **V, W, X, Y** and **Z** are farm tools and equipment. Identify each.*

V *: Cross cut saw / rip saw*

W *: Pruning saw*

X *: Forked hive*

Y *: Rake*

Z *: Hand hoe*

*(b) Describe the differences between **V** and **W, X** and **Y, X** and **Z**.*

V** and **W

W has a curved blade while V has a straight blade

V is big while W is small in size. 1 = 1 mark

X** and **Y

X has big or thick prongs while Y has small prongs

X is heavy in weight Y is light in weight.

X has 3 prong while Y has more prongs

X and Z

X has prongs while Z has s flat blade

X has pointed prongs while Z has a sharp edge.

*(c) State **three** reasons for maintaining the above tools and equipment in a good working condition. (1½ mark)*

- *To reduce injuries to people using the tools and equipment*
- *To increase the durability of the tools and equipment*
- *To increase the efficiency of farm tools and equipment*
- *To reduce the costs of increased repair of damaged tools*
- *To increase their resale value*

Any 3 1/2 @ 3 x ½ = 1 ½

*(d) Explain the role played by **X, Y** and **Z** during the preparation of a seed bed.*

- *X digs the site deep to remove rhizomes and loosen tehsoil*
- *Y removes rhizomes, big soil clods and plant roots from the seed bed to make it smooth*
- *Z removes surface weeds from site and raises soil to improve aeration and drainage*
- *Digs holes in which seeds or seedlings are to be planted*

END