**

**‘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)*

1. *(a) To 10cm3 of soil sample* ***H*** *in a measuring cylinder add 1 spatula*

*endful of Barium sulphate followed by 10cm3 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.*

1. *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.*

1. *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 10cm3 of specimen H on a petri dish, add 10cm3 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 12cm3 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.*

1. *Observation. (*

*A light green / lime green / yellow portion / ring / part forms in surface solution.*

1. *pH of solution. ( ½ mark)*

*Acidic*

1. *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*

1. *(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*

1. *(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.*

1. *(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***