



AGRICULTURAL SCIENCE STUDY GUIDE

Week 11



Answering the question

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Similar sounding and contrasting terms

Every year since 2008, the higher level paper has had a question on similar sounding and contrasting terms. It appears in **Question 8 part (c)** and consists of four pairs of terms. The language in the question varies but usually the candidate is asked to “distinguish between”, “write a short note on” or “highlight the differences between” three of the four pairs.

Confused? Many students get confused when they read the question as they believe that the terms must somehow be linked to each other. The reality is that the only thing that may link the terms in a pair is that they sound the same.

For example, in 2014, the question asked to highlight the main differences between “Earthing up and steaming up”. These terms are in no way linked. One is to do with potato production and the other with sheep production, but they sound similar as they both have the word “up” at the end. It is totally understandable that students get confused as some of the pairs of terms are linked to the same topic. For example, in 2015 the question asked to distinguish between the “hepatic vein and the hepatic portal vein”. In this case, they are linked because they sound the same but also because both are connected to the liver.

Advice

The best way to approach this question is to treat each term in a pair separately. Do not worry if the terms are linked or not. Take each term in the pair and give a short description of it as if the other one is not even mentioned. If you know a definition of the term, you should write that and if you can give examples of what you are explaining that may also be worth marks.

If we look back at the marking schemes for the last 10 years, we see that this approach will usually acquire full marks. Even though it only asks you to answer three parts I would recommend attempting all four parts to try to maximise your chances of achieving top marks.

In this article, I will give the answers to some terms that have come up in previous years as well as some that have not. As you will see from the answers below you do not need to give long answers in this question, keep it simple and to the point. The *Dictionary of Agricultural Terms* that is available to students who purchase the *Irish Farmers Journal* can be very useful for quickly finding the answers to these questions.



Examples

Tagging and dagging

☞ Tagging is a process in which animals are given a plastic tag in their ear which allows the farmer identify them. It is a legal requirement in cattle.

☞ Dagging is the removal of dirty fleece from sheep to help prevent maggots.

Rhizome and ribosome

☞ Rhizome is a swollen underground stem whereby roots emerge at the nodes. It acts as a modified storage organ and can be used in asexual reproduction.

☞ Ribosome is a cell organelle where proteins are manufactured.

Mitosis and meiosis

☞ Mitosis is a form of cell division resulting in two daughter cells identical to the parent cell.

☞ Meiosis is a form of cell division in which a diploid cell forms four daughter cells which are haploid. This usually occurs during sexual reproduction.

Urether and urethra

☞ Urether is a vessel that carries urine from the kidneys to the bladder.

☞ Urethra is the vessel that carries urine from the bladder to the outside.

Testa and testes

☞ Testa is the protective outer layer of a seed.

☞ Testes are the male sex organ that produces sperm and testosterone.

Direct sowing and direct drilling

☞ Direct sowing is a method of planting a crop that involves ploughing and harrowing.

☞ Direct drilling is a method of planting a crop into unploughed ground. It is often referred to as minimum tillage or min-till.

Combine harvester and forage harvester

☞ Combine harvester is a machine that cuts a crop and threshes it, and sorts the grain from the straw or chaff. It can be used to harvest crops such as cereals.

☞ Forage harvester is a machine which picks up, chops and loads green crops such as grass into a trailer to make silage. When used to harvest maize it also cuts the crop.

Seed dressing and top dressing

☞ Seed dressing is the treatment of seeds with fungicide and/or insecticide to prevent disease.

☞ Top dressing is applying fertiliser on top of a growing crop.



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Heart rot and foot rot

☞ Heart rot is a disease of sugar beet and mangolds caused by boron deficiency.

☞ Foot rot is a bacterial disease affecting the horn of a sheep's foot causing lameness. It is common on wet ground.

Farrowing and harrowing

☞ Farrowing is act of giving birth to piglets.

☞ Harrowing is the process of breaking up soil to produce a seedbed for sowing a crop.

Pathogen and oestrogen

☞ Pathogen is an infectious or toxin forming microorganism that causes disease.

☞ Oestrogen is a female hormone that promotes the development of secondary sex characteristics. It is also involved in the oestrus cycle in females.

Crossbreeding and crossing over

☞ Crossbreeding is the mating of animals of different breeds to get the best characteristics of both in the offspring.

☞ Crossing over is a process in which chromosomes exchange genetic material during meiosis.

Active transport and active immunity

☞ Active transport is the movement of a substance from an area of low concentration to an area of high concentration and it requires energy.

☞ Active immunity is where an animal creates its own antibodies if it is exposed to a disease or if it receives a vaccination.

Nitrification and denitrification

☞ Nitrification is the conversion of ammonium ions into nitrate ions by nitrosomonas and nitrobacter.

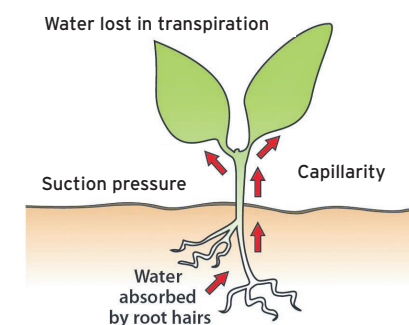
☞ Denitrification is the conversion nitrates into nitrogen gas by thiobacillus.

Top dressing and topping

☞ Top dressing is applying fertiliser on top of a growing crop.

☞ Topping is cutting grass post grazing to a height of 5cm to prevent grass from becoming stemmy. It helps to control weeds and encourage tillering.

Water movement in plants



Transpiration and translocation

☞ Transpiration is the loss of water vapour through the stomata in leaves of a plant.

☞ Translocation is the movement of sugar through the plant in the phloem.

Hepatic vein and hepatic portal vein

☞ Hepatic vein brings blood from the liver to the heart.

☞ Hepatic portal vein brings blood from small intestine to the liver.

Tilling and tillering

☞ Tilling is the process of breaking up soil to produce a seedbed such as ploughing and harrowing.

☞ Tillering is the ability of grass plants to produce side shoots from the base of the main plant.



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