Assessment Schedule – 2020

Agricultural and Horticultural Science: Demonstrate understanding of how the production process meets market requirements for a New Zealand primary product(s) (91531)

Assessment Criteria

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding involves **explaining** how the production process meets market requirements for a New Zealand primary product(s).	*Demonstrate in-depth understanding* involves **explaining, in detail,** how the production process meets market requirements for a New Zealand primary product(s).	*Demonstrate comprehensive understanding* involves **using detailed explanations to justify** how the production process meets market requirements for a New Zealand primary product(s).

Evidence

PART A	Evidence
Demonstrates understanding of market requirements of a primary product.	**Market requirements** **Explains** in general terms OR **Explains in detail** the market requirements of the primary product, including specific data and examples. TWO different market requirements must be used from the list provided. *Timing requirements* • The returns for the chilled lamb market in the UK are high pre-Christmas, with premiums being paid to producers who can supply during this time. • New Zealand apples are in high demand in Asia when their domestic producers cannot produce fruit. This gives us a window of supply. New Zealand fruit is in demand from week 7 of the year through to week 35; after that Asia's domestic supply kicks in. Early in this window is especially profitable for New Zealand producers as other southern hemisphere producers are not in the market. • Mandarins are required for Golden Week in Japan, and premiums are paid for growers who can supply during this week. *Quality requirements* • Apples are to have less than 1cm^2 of blemish on their skin to be able to be sold as class 1 fruit. This is due to their being sold as high-quality premium fruit. • Strong wool is used for carpets and needs to be sound, and not break easily for it to make a quality carpet. The staple strength would need to be greater than 30Nkt, preferably higher. This way, the strands of wool will not break easily. *Attribute requirements* • Wool used for clothing like Icebreaker needs to be around 20 microns. This is to ensure the fibre is not prickly when worn next to the skin.

	• Apples need to be a count size of between 70 and 90 to return high prices in the Asian markets. The count size is the number of applies that can fit into an 18.6 kg box. • Satsuma mandarins going to the Japanese market need to be in the size range of 55 to 63 mm. *Quantity requirements* • 700 tonnes of mandarins are supplied into the Japanese market, with much of this demand being attributed to the festivities associated with Golden Week.

PART B	Evidence
Demonstrates understanding of how management practices allow the producer to meet market requirements.	**Management practices** **Explains** in general terms OR **Explains in detail** how management practices allow the producer to meet market requirements, including specific data, and examples, e.g. volumes of water applied, fertiliser volumes, feed types used, varieties used etc. The management practices must link to the market requirements for both Achievement and Merit. Management practices may be selected from within the establishment-to-harvest cycle of the primary product. *High-quality feed – Timing* • Having lambs on high-quality crops, with high energy values, will result in faster weight gain. Lambs put on an average of 150 g per day 'live weight' on average pasture but are able to put on in excess of 500 g per day live weight on crops such as chicory. Higher weight gains per day will result in the lamb reaching slaughter size earlier, allowing them to make the chilled Christmas market, where higher returns are paid. *Fruit thinning – Quality* • Growers of apples commonly thin their fruit trees, to reduce the number of fruit on the tree. They do this by spraying sulphur or hormones during and just after flowering, to force the tree to drop flowers and fruitlets. By reducing the number of apples on the tree, less fruit comes into contact with each other in bunches. It is these collisions that cause blemishes on fruit that can downgrade the fruit or make them unsellable. *Breed selection – Product attribute* • Farmers must choose the correct breed of sheep to allow them to produce the micron size the market requires. Base layer clothing typically requires the micron count to be 20 microns or less to make it softer against the skin and less irritable. Merino sheep produce wool with a micron count from 12 microns upwards, therefore allowing the farmer to meet the requirements of the market by choosing this breed.

PART C	Evidence
Demonstrates understanding of how management practices can maximise profit.	**Maximising profit** **Justifies** the management practice that has the greatest influence on a producer's ability to maximise profit. The candidate should cover the strengths of their chosen management practice and why it is the most significant management practice affecting profitability. The candidate should cover how their chosen management practice is able to influence a range of the market requirements already covered and those not covered in previous parts of the examination. *Flushing – lamb production* • Putting ewes on high-quality feed before ovulation increases the amount of eggs released. This results in a higher number of fertilised eggs, and more twins and triplets are produced, increasing volumes. • Putting ewes on high-quality feed ensures the ewes are in good health, which allows them to pass on goodness to their lambs in the early stages of pregnancy. Consequently, there is an increase in the volume produced. • Putting ewes on high-quality feed can assist in the release of eggs earlier than with no stimulus. This results in earlier production and enables farmers to get lambs to market earlier to meet the high demand, with less competition from other suppliers. *Breed selection – lamb production* • The choice of breed can affect the fertility of the flock. A more fertile breed will produce more twins and triplets, increasing the volume of sheep meat produced. • The choice of breed will determine how fast the lambs grow, which will determine the time the lambs will be supplied to market. Faster-growing lambs will get to export markets earlier where higher prices can be received. • The choice of breed can determine how large the lamb will grow to. Larger lambs will produce larger carcasses, which will increase the volume of sheep meat exported from New Zealand. • The breed of sheep will determine where the meat is laid down on the carcass. The conformation of the animal will determine how much the market will pay as they will want muscle in certain parts of the carcass for their consumption requirements. Each market has different attribute requirements. • The choice of breed will determine how much fat is on the carcass. Too lean and the eating experience is less due to less taste, too much and consumers have health concerns. Low-fat meat and high-fat meat are deemed low quality meat. *Justification* • The choice of breed allows the producer to meet all aspects of the market requirements. They are able to alter the quantity, quality, timing and attributes of the lamb meat, therefore maximising profitability. The more market requirements producers are able to meet, the more consumers are willing to pay. • Buying genetics to allow the producer to meet these market requirements benefits the producer not just this year, but into the future as you do not lose genetics. • Buying in rams allows many lambs to be produced due to mating ratios. • While flushing is useful, it is not reliable, as it is dependent on feed availability and the condition of the ewe prior to flushing. Flushing should be done in conjunction with good genetics, not to replace it. *Note: The answer will be reasoned and supporting data included. Answers should be well prepared and laid out in logical order.*

N1	N2	A3	A4	M5	M6	E7	E8
Partially explains how ONE relevant management practice allows the producer to meet a market requirement.	**Partially explains** how TWO relevant management practices allow the producer to meet market requirements.	**Explains** in general terms how ONE relevant management practice allows the producer to meet a market requirement.	**Explains** in general terms how TWO relevant management practices allow the producer to meet market requirements.	**Explains in detail** (using quantitative data or well-linked material) how ONE relevant management practice allows the producer to meet a market requirement. *AND* **Explains** in general terms how ONE relevant management practice allows the producer to meet a market requirement.	**Explains in detail** (using quantitative data or well-linked material) how TWO relevant management practices allow the producer to meet market requirements.	**Explains in detail** (using quantitative data or well-linked material) how TWO relevant management practices allow the producer to meet market requirements. *AND* **Provides a partial justification** of the management practice that has the greatest effect on maximising profitability, but lacking detail or data in some areas.	**Explains in detail** (using quantitative data or well-linked material) how TWO relevant management practices allow the producer to meet market requirements. *AND* **Provides a full and comprehensive justification** of the management practice that has the greatest effect on maximising profitability.

N0 = No response; no relevant evidence.

Cut Scores

Not Achieved	Achievement	Achievement with Merit	Achievement with Excellence
0 – 2	3– 4	5 – 6	7 – 8