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SAMPLE QUESTIONS
One question from each section of this exam, with its marking scheme, so teachers can see what the full paper is like. Full exam and solutions: captivateeducation.com.au/trial-exams

Agricultural and Horticultural Studies

Question and Answer Book

Practice examination 1 – 2027

- Reading time is 15 minutes
- Writing time is 1 hour 30 minutes

Materials supplied

- Question and Answer Book

Instructions

- Answer all questions in the spaces provided.
- Write your responses in English.
- Use the additional space at the end of this book if you need extra space to complete an answer.

Students are not permitted to bring mobile phones and/or any unauthorised electronic devices into the examination room.

Contents

10 questions (100 marks)

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Practice material in the layout of the 2025 VCAA paper – generated 2027. Not a VCAA examination.

Sample – Question 1 of the 10 questions in this section.

Question 1 (10 marks)

Orchardists in the Goulburn Valley are trialling a robotic harvesting platform that picks apples from trellised 'fruiting wall'[1] rows. Cameras on the platform locate each apple and judge its colour and size, and soft suction arms detach the fruit and lower it gently into a bin. The platform can keep picking through the night under its own lights …

Growers in the trial group said the robot may help to fill picking shifts that have been hard to staff in recent seasons, although [the platform] cannot yet pick from older, wide-canopy trees, and each unit costs more than a new orchard tractor.

Source: Adapted from a fruit growers' association newsletter, 2026

[1]fruiting wall – a narrow row of trees trained flat on a trellis so that most of the fruit hangs on the outside of the canopy

Due to copyright restrictions, this material is not supplied.
Photograph: a robotic harvesting platform with suction arms working along a trellised apple row
(Shutterstock search: "robotic apple harvester orchard")

a. Other than harvesting, outline **one** way in which innovation and technology are used in the everyday practices of an Australian orchard. 2 marks

b. Evaluate the potential value of robotic harvesting to the Australian apple and pear industry. In your response, describe **one** positive impact and **one** negative impact of robotic harvesting on the industry and make an overall judgement. 6 marks

Positive impact

Negative impact

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Overall judgement

c. Outline **one** way in which the widespread adoption of robotic harvesting could affect healthy rural and regional communities, such as those in the Goulburn Valley. 2 marks

End of sample questions

SAMPLE

Marking scheme for the sample questions

Question 1a. (2 marks)

*Other than harvesting, outline **one** way in which innovation and technology are used in the everyday practices of an Australian orchard.*

To be awarded full marks, students were required to:

The question required students to outline one way innovation and technology are used in everyday orchard practices other than harvesting (U3O1-KK1).

Full marks were awarded to responses that:

- identified one everyday innovation or technology used in orchards other than harvesting (1 mark)
- provided an overview of how it is used in the orchard's practices (1 mark).

Not awarded marks: a harvesting technology (excluded by the stem); naming a technology with no indication of how it is used.

Responses could have included:

- soil-moisture probes linked to automated drip irrigation that schedule watering to the trees' needs
- pheromone traps or smart camera traps that count codling moth or fruit fly so sprays are timed to pest pressure
- hail and bird netting over rows to protect fruit from weather and bird damage
- weather stations and apps that predict disease risk (such as apple scab infection periods)
- GPS-guided or variable-rate sprayers that apply chemicals only where the canopy is
- optical grading lines in the packing shed that sort fruit by colour, size and blemishes.

Sample full-mark response

> Many orchards use soil-moisture probes connected to their drip irrigation system. The probes measure how much water is in the root zone and the irrigation is turned on only when the soil is drying out, so trees get the water they need without waste.

Question 1b. (6 marks)

*Evaluate the potential value of robotic harvesting to the Australian apple and pear industry. In your response, describe **one** positive impact and **one** negative impact of robotic harvesting on the industry and make an overall judgement.*

To be awarded full marks, students were required to:

The question required students to evaluate the potential value of robotic harvesting to the Australian apple and pear *industry* by describing one positive and one negative impact and making an overall judgement (U3O1-KK2, U3O1-KS2).

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Full marks were awarded to responses that:

- described one positive impact on the industry with a mechanism linking it to robotic harvesting (2 marks)
- described one negative impact on the industry with a mechanism linking it to robotic harvesting (2 marks)
- made an overall judgement of the technology's value to the industry that weighed the two impacts (1 mark)
- supported the judgement with a reason, such as the scale, timeframe or orchard type over which the benefit outweighs the cost (1 mark).

Not awarded full marks: impacts on one orchard or the trial group only rather than the industry; two positive impacts or two negative impacts; a description of the platform with no judgement; a judgement with no reason.

Responses could have included:

- positive: reduced reliance on seasonal labour, so fruit can be picked at optimum maturity even when workers are scarce, reducing losses from fruit left unpicked
- positive: picking around the clock shortens the harvest window, so more fruit is picked at the right maturity and storage life and quality may improve
- positive: cameras record the size and colour of every apple, giving the industry yield and quality data for forecasting and marketing
- positive: gentle suction picking may reduce bruising and pack-out losses
- positive: fewer workers on ladders may reduce falls and injuries in the industry
- negative: high purchase and maintenance costs that smaller growers may not afford, widening the gap between large and small businesses
- negative: only suited to trellised fruiting-wall orchards, so growers with older wide-canopy trees would have to replant at great cost before benefiting
- negative: fewer seasonal jobs and the need for specialist technicians in rural areas
- negative: breakdowns during the short harvest window could leave fruit unpicked if no labour is on standby
- judgement: high value in the long term for new high-density plantings and labour-short districts; limited value in the short term for the whole industry until costs fall and older orchards are replanted.

Sample full-mark response

> Positive impact: Robotic harvesting may reduce the apple and pear industry's reliance on seasonal pickers, who have been hard to find. Because the robot can pick through the night, more fruit could be picked at the right maturity instead of being left on the tree, which can reduce losses across the industry. Negative impact: Each platform costs more than a tractor and only works on trellised fruiting-wall rows, so many smaller growers with older trees may not be able to use it without replanting their orchards. This could leave smaller growers behind. Overall judgement: I think robotic harvesting has high long-term value to the industry because labour shortages are a major

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> risk at harvest, but in the short term its value is limited to large growers with modern trellised orchards until costs come down.

Question 1c. (2 marks)

*Outline **one** way in which the widespread adoption of robotic harvesting could affect healthy rural and regional communities, such as those in the Goulburn Valley.*

To be awarded full marks, students were required to:

The question required students to outline one way widespread robotic harvesting could affect healthy rural and regional communities (U4O2-KK2, CSS7).

Full marks were awarded to responses that:

- identified one effect on a rural or regional community (1 mark)
- outlined how robotic harvesting brings about that effect on the community (1 mark).

Not awarded marks: effects on the orchard business's profit with no link to the community; "jobs will be lost" with no effect on the community described.

Responses could have included:

- fewer seasonal workers in the district, reducing spending in local shops, caravan parks and hospitality businesses
- new skilled jobs in servicing and programming robots, which may attract young people to stay in or move to the region
- orchards remaining viable when labour is scarce, keeping families, school enrolments and sporting clubs in the district
- less stress on growers about finding pickers each season, which may support mental health and wellbeing.

Sample full-mark response

> Robotic harvesting could reduce the number of seasonal pickers who come to the Goulburn Valley each year. These workers rent accommodation and spend money in local shops and cafes, so fewer of them may reduce income for small businesses in the towns.

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