

2009 HSC Primary Industries Sample Answers

This document contains 'sample answers', or, in the case of some questions, 'answer may include'. These are developed by the examination committee for two purposes. The committee does this:

- (a) as part of the development of the examination paper to ensure the questions will effectively assess students' knowledge and skills, and
- (b) in order to provide some advice to the Supervisor of Marking about the nature and scope of the responses expected of students.

The 'sample answers' or similar advice, are not intended to be exemplary or even complete responses. They have been reproduced in their original form as part of the examination committee's 'working document'. While the handwritten notes have been typed for legibility, no further editorial change or addition has occurred.

Section II

Question 16 (a)

Answers could include:

- Target organisms
- Neighbouring farms
- Application equipment
- Type of chemicals
- Non-target organisms
- Stage of growth of target
- Withholding periods of plants/animals

Question 16 (b) (i)

Sample answer:

Identifies Tuesday as the best day

Question 16 (b) (ii)

Sample answer:

Tuesday is the best day because:

- The wind direction is away from the neighbouring farm
- The wind speed is appropriate to reduce spray drift
- There is only a moderate risk of frost and very little chance of rain

Question 16 (c)

Sample answer:

- Dates
- Application equipment
- Wind speed every 30 minutes during spraying
- Temperature
- Humidity
- Name and details of application
- Chemical used
- Rate used
- Time of day
- Target species
- Diagram showing sensitive areas

Question 17 (a)***Answers could include:***

- Danger to self and others
- What's available to use locally
- How far away are emergency services

Question 17 (b)***Sample answer:***

Factor 1 – Danger to self and others – Rescuers should protect themselves and other bystanders first. Yourself and others may need to assist in the rescue and treatment of the victim.

Factor 2 – Determining what's available locally is important in developing a clear plan on how to rescue the victim, and treat the victim until emergency services arrive.

Question 17 (c)***Answers could include:***

- Check airway– open the person's mouth and check for obstructions
- Check for breathing– if breathing (look for signs of rising and falling chest) put in recovery position. If not breathing, commence CPR
- Commence CPR– 2 initial breaths followed by 30 compressions

Question 18 (a)***Answers could include:******Hazard***

- Tractor roll over
- Tractor run over
- Caught in PTO
- 2 people on tractor
- Noise from tractor

Risk

- Traumatic injury/time off work
- Permanent injury OR death
- Loss of limb or severe cuts/abrasions
- Fall off/broken bones/time off work/deafness/hearing damage

Question 18 (b)***Answers could include:***

- Eliminate the hazard – Not using tractor in paddocks with steep ground
- Substitute the hazard – choose another machine, choose another method
- Engineering solution – Ensuring ROPS on the tractor
- PPE– Ensuring ear muffs, no loose clothing

Question 18 (c)***Sample answer:***

Eliminate use of XXXX is the best control measure, but may not be possible. Substituting a different machine could pose a lesser risk. Engineering design (eg ROPS) will further reduce the hazard. Creating safe working practices by the use of a SOP will also make workers aware of hazards.

Question 19 (a)***Sample answer:***

Clear guidelines are provided on how graph needs to be developed to get the mark indicated.

Question 19 (b)***Sample answer:***

Tomato

Question 19 (c)***Answers could include:***

- Residue in crops
- Consumer harm
- Market damage
- Legal implications
- Fines and penalties

Sample answers:

Chemical residue may still be in the strawberries which could cause potential danger to consumers, or loss of profit for growers.

Section III

Question 20

Answers could include:

Example of named weed: Blackberry

Characteristics that make blackberry a successful weed:

- Produces large amounts of seed that are dispersed by birds and animals
- Spreads vegetatively
- Perennial
- Competes for light and moisture with native and introduced species
- Vigorous growth habit
- Produces large impenetrable thickets
- Adapted to a wide range of soil and climatic conditions

Control measures:

- Biological– Blackberry rust
 - Reduces vigour of plants but does not usually kill all bushes
 - Good as part of IWM for control in inaccessible areas and along riparian zones where contamination of waterways is an issue
- Mechanical/ biological– Goats
 - Preferentially graze blackberry bushes and reduce vigour
 - Can penetrate large bushes
 - Good on control of re-growth
 - Compete with other animals for food
 - Can damage riparian areas
- Chemical control
 - Can give high levels of control
 - Relatively expensive
 - Needs actively growing plants to work effectively
 - Needs follow up control
 - Potential disadvantages–contamination of waterways, destruction of non-target plants
- Mechanical control– Slashing/ burning
 - Gives immediate removal of large bushes
 - Re-growth from underground runners
 - Potential for erosion along creek banks
 - Potential for vegetative spread

Possible Integrated Weed Management Program

Initial chemical control with the introduction of Blackberry Rust to inaccessible areas. Follow up chemical control during the next growing season. Sowing of competitive plant species in affected areas. Introduce goats on a grazing rotation to manage ongoing growth and re-infestation.

Question 21

Answers could include:

OH&S hazards and risks:

- Tractor roll overs
- Crush injuries
- Other equipment including– chain saws, borers, working outside, sunburn, heat stress, manual handling, lifting fencing materials, handling wire, clearing fence lines
- Working in isolated locations

Environmental hazards and risks:

Contamination of water caused by construction of the fence, causing erosion, water contamination from machinery, stock movement along the fence line causing erosion, stock contaminating water in the creek, weed infestations on disturbed soil areas, constriction of water flow during flood events.

Measures to minimise risks and hazards:

Long-term strategies are likely to be the most effective.

OH&S:

- Complete risk assessment and implement control measures for fencing project
- Train operators
- Maintain tools and equipment
- Supply PPE and ensure it is used and maintained
- Use SOPS for equipment
- Ensure emergency communication strategy is in place
- First Aid kit on site
- Remove equipment and machinery off site when not working on project

All these strategies should be in place before the project commences to ensure that all participants know what to do in the event of an OH&S incident.

Environment:

- Plan fence to minimise potential to contaminate water flows
- Locate fence at right angles to creek line
- Minimise soil disturbance on fence and drainage line
- Site fence in a stable area of creek
- Install erosion control measures where soil is disturbed
- Ensure fuels and substances brought on site are used away from creek line
- Ensure a spills kit is available
- Reduce potential of build up of vegetative material up stream of fence
- Revegetate disturbed areas
- Time construction to minimise the risk of flooding during construction of the fence

In evaluating these strategies, students need to give support for the use of each of these strategies.

Question 22

Answers could include:

Enterprise: Central tablelands livestock enterprise

Extreme weather events could be:

- Snow
- Extreme heat
- Extreme cold
- Hail
- High winds
- High rainfall

Sources of information:

BOM:

- Reliable and up to date wide range of information
- Provides forecasts
- Weather warnings
- Available on the internet, radio and TV
- Can be specific

Newspaper:

- Not up to date
- Not usually specific
- Generally a summary

Radio:

- Regularly updated
- Summary of information
- Wide dispersal of information
- Interpreted by provider

TV:

- Updated 2–3 times a day
- Summary of information
- Wide dispersal of information
- Interpreted by provider

Emergency services:

- Activated during emergencies
- Specific
- Good forecasting

Enterprise measurements on farm:

- Up to date
- Very specific
- Does not give general information or forecasts

Word of mouth:

- Can be unreliable
- Quality of information is difficult to assess
- Can be coloured by individuals
- Contradictory– can include good local knowledge

Question 22 (continued)

Preventative Actions: Examples for a number of extreme weather events.

Snow and low temperatures:

Move stock to shelter, provide shelterbelts in paddocks, maintain stock in good condition, supply supplementary feed, time husbandry and breeding activities (shearing, calving, lambing) to minimise the risks of these activities. Have a snow emergency plan.

Extreme rainfall:

Have a plan for use during floods; design paddock layout to include high areas (not flood prone). Provide shelter for livestock when rain combines with wind and low temperatures. Maintain emergency feed supplies for livestock, monitor BOM forecasts during high probability of high rainfall. Move livestock from flood prone areas, remove equipment from flood prone areas and maintain flood fences.

Extreme heat:

Have a fire emergency plan in place, maintain fire breaks, plan and carry out an annual fire maintenance program for farm structures and equipment, e.g. remove built up fuel, clean gutters, ensure shade and water is available for livestock, minimise stock movement and carry out regular stock checks.

Planning for the event is far better than short-term reactions to critical events.