

# 2023 HSC Primary Industries Marking Guidelines

## Section I

### Multiple-choice Answer Key

Question	Answer
1	D
2	C
3	B
4	C
5	A
6	C
7	B
8	B
9	C
10	A
11	D
12	B
13	C
14	B
15	A

## Section II

### Question 16 (a)

Criteria	Marks
• Describes the purpose of equal employment opportunity (EEO)	2
• Provides some relevant information	1

**Sample answer:**

The purpose of EEO is to reduce discrimination and to ensure that every person regardless of race, gender, sexual orientation or physical ability has an equal opportunity to find employment based on merit.

### Question 16 (b)

Criteria	Marks
• Provides a detailed explanation of the importance of considering communication skills, work ethic and experience for an employer when hiring workers in a primary industry	5
• Provides a sound explanation of the importance of considering communication skills, work ethic and experience for an employer when hiring workers in a primary industry	4
• Provides some explanation of the importance of considering communication skills, work ethic and/or experience for an employer when hiring workers in a primary industry	3
• Demonstrates some understanding of the importance of considering communication skills, work ethic and/or experience for an employer	2
• Provides some relevant information	1

**Sample answer:**

When communication is effective, it leaves no room for misunderstandings or error, decreasing the chance of conflict between co-workers.

A good work ethic is important because an employer needs to be able to trust an employee to carry out tasks correctly, achieving high quality outcomes.

Prior experience ensures that the employee carries out the tasks in a safe and efficient manner, reducing the risk of injury to oneself and damage to machinery.

### Question 17 (a)

Criteria	Marks
• Identifies TWO impacts that a severe weather event could have on the farm	2
• Identifies ONE impact that a severe weather event could have on the farm	1

**Sample answer:**

A flood could result in the bridge becoming inaccessible and the dairy being flooded.

### Question 17 (b)

Criteria	Marks
• Demonstrates a sound understanding of the actions a farmer should take to reduce the impact of a severe weather event	3
• Demonstrates some understanding of the actions a farmer should take to reduce the impact of a severe weather event	2
• Provides some relevant information	1

**Sample answer:**

To reduce the impact of a flood, the farmer should move the 15 dairy calves to the old hay shed.

The farmer should move the 200 grazing cows via the dairy then relocate them up to either Cooper's or Pop's Paddock.

### Question 17 (c)

Criteria	Marks
<ul style="list-style-type: none"> <li>Explains in detail long-term strategies that could be implemented to minimise the impact of future weather events on this farm</li> </ul>	4
<ul style="list-style-type: none"> <li>Describes some long-term strategies that could be implemented to minimise the impact of future weather events on this farm</li> </ul>	3
<ul style="list-style-type: none"> <li>Outlines long-term strategies that could be implemented to minimise the impact of future weather events on this farm</li> </ul>	2
<ul style="list-style-type: none"> <li>Provides some relevant information</li> </ul>	1

**Sample answer:**

A long term strategy could be ensuring that access to the property is available by either raising the bridge or creating an alternative route out of the property. This ensures safety of animals and people and allows movement away from the area.

Moving the chemical storage shed to higher ground could also prevent an environmental disaster caused by a spill or leak.

Relocating the dairy and the calf nursery to higher ground would ensure the safety and welfare of livestock and reduce losses.

### Question 18 (a)

Criteria	Marks
<ul style="list-style-type: none"> <li>Outlines the correct weather conditions at both Cooma and Tamworth based on the map provided</li> </ul>	2
<ul style="list-style-type: none"> <li>Outlines the correct weather conditions at Cooma or Tamworth based on the map provided</li> </ul>	1

**Sample answer:**

At Cooma, the cold front indicates gusty winds and a sudden drop in temperature.

At Tamworth, the map indicates light winds and very settled weather conditions (or clear skies no clouds).

**Question 18 (b)**

Criteria	Marks
• Explains the effect of high humidity AND high temperature on either a plant OR an animal	3
• Describes the effect of high humidity OR high temperature on either a plant OR an animal	2
• Provides some relevant information	1

**Sample answer:**

High humidity promotes the growth of mould and fungus which can kill the plant. High temperature can cause wilting in plants as moisture is evaporating from the leaves faster than the roots can supply water. It will also result in the stunting of plant growth.

**Question 18 (c)**

Criteria	Marks
• Explains the benefit of using forecasting techniques for primary industries workers	4
• Describes the benefits of using forecasting techniques for primary industries workers	3
• Outlines the use of forecasting techniques for primary industries workers	2
• Provides some relevant information	1

**Sample answer:**

Four-day forecasting from the BOM site – this is used to determine the weather conditions over the coming days. This information benefits workers by helping them to organise work tasks. For example, if rain is forecast, the spraying of weeds may be delayed. The chemical would be ineffective if it was sprayed immediately before rain.

Nightly news on TV – provides a seven-day forecast and enables the primary industries workers to prioritise specific work tasks. For example, a predicted hailstorm may influence farmers to harvest early, ensuring maximum profitability of the crop.

### Question 19 (a)

Criteria	Marks
<ul style="list-style-type: none"> <li>Identifies ONE consequence of a workplace injury</li> </ul>	1

**Sample answer:**

Loss of productivity in the workplace.

### Question 19 (b)

Criteria	Marks
<ul style="list-style-type: none"> <li>Clearly distinguishes between a manageable first aid situation and an emergency situation using specific examples</li> </ul>	3
<ul style="list-style-type: none"> <li>Outlines a manageable first aid situation and an emergency situation</li> </ul>	2
<ul style="list-style-type: none"> <li>Provides some relevant information</li> </ul>	1

**Sample answer:**

A manageable first aid situation, such as when a worker rolls their ankle, is one which is not life-threatening and can be sufficiently treated with first aid (eg ice, elevation).

An emergency situation, such as when a worker is bitten by a snake, is one which is potentially life-threatening and requires emergency services (eg 000).

**Question 19 (c)**

Criteria	Marks
<ul style="list-style-type: none"> <li>Provides a detailed explanation of how the risk of accidents occurring in the diagram can be minimised by using the hierarchy of control</li> </ul>	6
<ul style="list-style-type: none"> <li>Provides a sound explanation of how the risk of accidents occurring in the diagram can be minimised by using the hierarchy of control</li> </ul>	5
<ul style="list-style-type: none"> <li>Provides some explanation of how the risk of accidents occurring in the diagram can be minimised</li> </ul>	4
<ul style="list-style-type: none"> <li>Outlines how the risk of accidents occurring in the diagram can be minimised</li> </ul>	2–3
<ul style="list-style-type: none"> <li>Provides some relevant information</li> </ul>	1

**Sample answer:**

The hierarchy of control, from highest priority to lowest, involves elimination, substitution, modification, isolation, engineering control, administrative and PPE. In this scenario, the tractor cannot be eliminated, substituted or modified as there is no other safer piece of equipment that can do certain jobs.

- Engine running – the best way of applying the hierarchy is to isolate by turning off the engine and applying brakes, ensuring the tractor is not moving while workers are continuing their tasks to fix the tractor.
- PPE – if the tractor is running, then earmuffs/plugs should be worn to reduce hearing damage.
- Worker with hands underneath slasher – possible injury if PTO is accidentally engaged. This is an administrative control as the worker should be trained in SOPs.

## Section III

### Question 20

Criteria	Marks
<ul style="list-style-type: none"> <li>Justifies a range of procedures to minimise the risks associated with the transporting, handling and storage of chemicals in a primary industries workplace</li> <li>Presents a logical and cohesive response</li> <li>Communicates ideas and information using relevant industry terminology and workplace examples</li> </ul>	13–15
<ul style="list-style-type: none"> <li>Explains procedures to minimise the risks associated with the transporting, handling and storage of chemicals in a primary industries workplace</li> <li>Presents a logical response</li> <li>Communicates ideas and information using relevant industry terminology and workplace examples</li> </ul>	10–12
<ul style="list-style-type: none"> <li>Describes how to minimise the risks associated with the transporting, handling and storage of chemicals in a primary industries workplace</li> <li>Presents a clear response</li> <li>Communicates ideas and information using some relevant industry terminology and workplace examples</li> </ul>	7–9
<ul style="list-style-type: none"> <li>Describes how to minimise the risks associated with the transporting OR handling OR storage of chemicals in a primary industries workplace</li> <li>Uses some industry terminology and/or workplace examples</li> </ul>	4–6
<ul style="list-style-type: none"> <li>Provides some relevant information</li> </ul>	1–3

#### **Answers could include:**

The *Chemicals Act 1999* is legislation enforcing that chemicals are transported, handled and stored in a manner which minimises the risk of unintended exposure.

#### *Transporting*

- Appropriate transportation of chemicals in a primary industries workplace is paramount in ensuring chemicals are kept safe to minimise the risk of unintended exposure.
- Licensing and labelling of transport vehicles such as the driver holding a dangerous goods licence along with displaying the appropriate signage to show contents of vehicle is very important to ensure all rules and guidelines are followed. This allows emergency responders to ascertain appropriate measures to resolve issues if required, again minimising further issues.
- Simple ratchet straps to tie down chemicals against the headboard of a tray back ute should prevent the unintended spillage of chemicals. If a spill was to occur, this can dramatically affect the health and safety of both workplace workers and the surrounding work and natural environment. This could cause long-term illness as well as financial issues.

### *Handling*

- Work Health and Safety ensure ongoing safety of workers in a primary industries workplace. Handling chemicals can pose a threat to the worker and the immediate environment if not handled correctly. Using a forklift to remove drums from a truck bed on pallets is a lot safer than manually removing the chemicals to the ground which could result in a crack or split in a container if accidentally dropped.
- Another important aspect of handling would be the appropriate use of PPE to minimise contact between the worker and the chemical. For example, using gloves when handling drums or containers. This would prevent any absorption through the skin.
- Finally, when handling chemicals, simple techniques such as correct lifting procedures, bending the knees and lifting straight will help to avoid unnecessary physical harm. All of these will reduce the possibility of harm to workers and the environment.

### *Storage*

- Appropriate storage of chemicals is very important to prevent unintended use or exposure of a chemical. The Chemicals Act clearly states the requirements for a chemical storage facility to include precautions such as being well-ventilated, locked, MSDS, having rinse/shower facilities etc. This is to ensure the chemicals are kept in a safe location where unauthorised people cannot access them.
- Another aspect is to store chemicals in their original packaging and not decant into unlabelled containers. Once the traceability of specific chemicals is lost, it is very hard to manage and maintain a safe environment.
- Maintaining an appropriate register of stored chemicals along with MSDS information is extremely important for emergency services in the case of an issue near or in the facility.
- It is very important to avoid storing certain chemicals together in the same facility as they may become volatile. Again, following these guidelines and rules will help minimise the possibility of ill-effects chemicals can have on workers and the surrounding environment.

## Section IV

### Question 21 (a)

Criteria	Marks
• Outlines TWO benefits of safe work practices when working with livestock in a primary industries workplace	3
• Outlines ONE benefit of safe work practices when working with livestock in a primary industries workplace	2
• Provides some relevant information	1

**Sample answer:**

One benefit of safe work practices is the prevention of injury in both the handler (eg broken hand) and livestock (eg bruising). Another benefit is that there is less stress on the animals during handling in the yards if they are handled frequently and in a quiet manner.

### Question 21 (b)

Criteria	Marks
• Explains the importance of calibration and correct application of treatments when controlling a pest OR disease in livestock, with reference to a specific piece of equipment	4
• Describes the importance of calibration and correct application of treatments when controlling a pest OR disease in livestock, with reference to a specific piece of equipment	3
• Outlines the importance of calibration or correct application of treatments when controlling a pest OR disease in livestock	2
• Provides some relevant information	1

**Sample answer:**

Calibration is important in a drench gun as it checks that the equipment is delivering the correct dosage. Correct application of drench is essential so that the animal receives the correct amount according to their weight. This is carried out so that animals are not overdosed or underdosed with the chemical. Overdosing can cause toxicity and underdosing can cause worm resistance.

### Question 21 (c)

Criteria	Marks
<ul style="list-style-type: none"> <li>Provides an assessment of the importance of recognising parasites and their level of infestation for a livestock enterprise</li> <li>Includes specific examples for a livestock enterprise</li> </ul>	7–8
<ul style="list-style-type: none"> <li>Explains in detail the importance of recognising parasites and their level of infestation for a livestock enterprise</li> <li>Includes some examples for a livestock enterprise</li> </ul>	5–6
<ul style="list-style-type: none"> <li>Describes some aspects of the importance of recognising parasites and/or their level of infestation for a livestock enterprise</li> </ul>	3–4
<ul style="list-style-type: none"> <li>Provides some relevant information</li> </ul>	1–2

**Answers could include:**

Named animal: prime lamb production

In production of prime lambs, there are certain pests that can harm the animals. Knowing which pests will attack the sheep is important because it can have a significant impact on the health and wellbeing of the animal. An example of a pest on prime lambs is internal worms, such as the black scour worm. The worms suck the nutrients from the bloodstream, reducing the animal’s ability to put on weight and stay healthy. This can cause scours which in turn can attract other pests such as blowflies. The reduction in weight will dramatically affect the overall carcase yield and skin quality, which results in a decrease in profit for the farmer. If animals are left untreated, they will die from large pest infestations.

It’s very important to monitor the livestock in regard to the level of pest infestation, as treatment may be necessary to prevent death. Recognising the type of animal pest and its level of infestation can mean that the pest can be targeted with a specific treatment without killing important non-target invertebrates. At lower pest levels, it may be economically unviable for the farmer to implement a control program. A technique for monitoring worm infestation is using faecal egg count. Some farmers may implement a 10% infestation threshold level before initiating a treatment program. This will reduce the use of chemicals, reduce chemical resistance, as well as save money and time.

**Question 22 (a)**

Criteria	Marks
• Outlines TWO benefits of safe work practices in the treatment and control of plant pests, diseases and disorders	3
• Outlines ONE benefit of safe work practices in the treatment and control of plant pests, diseases and disorders	2
• Provides some relevant information	1

**Sample answer:**

A benefit of safe work practices (eg wearing of appropriate PPE) is that it can protect the worker from exposure to chemicals. Another benefit is it reduces the possibility of injury to workers (eg when lifting heavy items).

**Question 22 (b)**

Criteria	Marks
• Explains the importance of calibration and correct application of treatments when controlling a pest or disease in plants, with reference to a specific piece of equipment	4
• Describes the importance of calibration and correct application of treatments when controlling a pest or disease in plants, with reference to a specific piece of equipment	3
• Outlines the importance of calibration or correct application of treatments when controlling a pest OR disease in plants	2
• Provides some relevant information	1

**Sample answer:**

Calibration is important in a knap sack sprayer as it checks that the equipment is delivering the correct dosage. Correct application of herbicide is essential so that the weeds receive the correct amount. This is carried out so that there is no wastage and less possibility of damage to the environment. If weeds are underdosed, it can result in chemical resistance.

**Question 22 (c)**

Criteria	Marks
<ul style="list-style-type: none"> <li>Provides an assessment of the importance of recognising parasites and their level of infestation for a plant enterprise</li> <li>Includes specific examples for a plant enterprise</li> </ul>	7–8
<ul style="list-style-type: none"> <li>Explains in detail the importance of recognising parasites and their level of infestation for a plant enterprise</li> <li>Includes some examples for a plant enterprise</li> </ul>	5–6
<ul style="list-style-type: none"> <li>Describes some aspects of the importance of recognising parasites and/or their level of infestation for a plant enterprise</li> </ul>	3–4
<ul style="list-style-type: none"> <li>Provides some relevant information</li> </ul>	1–2

**Answers could include:**

Named plant: tomatoes

In production of all vegetable crops, there are certain pests that can damage the plants. Knowing which pests will attack the crop is important because it can have a significant impact on the quality and quantity of the produce to be harvested. An example of a pest on tomatoes is aphids. Aphids suck the sap from leaves and stems, which reduces the ability for the plant to grow properly and in turn affects fruit development. The reduction of fruit will dramatically affect the overall yield, which results in a decrease in profit for the farmer. Some pests, such as fruit flies will lay eggs in the fruit and damage the produce, resulting in a product of lower quality. This can make the product unsaleable.

It's very important to monitor the crop in regard to the level of pest infestation, as treatment may be necessary to prevent damage to the plants. Recognising the type of plant pest and its level of infestation can mean that the pest can be targeted with a specific treatment without killing important non-target invertebrates. At lower pest levels, it may be economically unviable for the farmer to implement a control program. Some farmers may implement a 10% infestation threshold level before initiating a treatment program. This will reduce the use of chemicals, reduce chemical resistance, as well as save money and time.

# 2023 HSC Primary Industries Mapping Grid

## Section I

Question	Marks	HSC content – focus area
1	1	Working in the industry — work practices – page 44
2	1	Weather — monitoring conditions – page 39
3	1	Weather — monitoring conditions – page 40
4	1	Safety — safe work procedures and practices – page 32
5	1	Weather — monitoring conditions – page 39
6	1	Safety — WHS consultation and participation – page 31
7	1	Sustainability — environment – page 35
8	1	Safety — safe work procedures and practices – page 32
9	1	Sustainability — environment – page 35
10	1	Sustainability — environmental hazard identification – page 35
11	1	Sustainability — resources – page 37
12	1	Safety — WHS consultation and participation – page 31
13	1	Weather — managing conditions – page 40
14	1	Working in the industry — employment – page 43
15	1	Working in the industry — employment – page 43

## Section II

Question	Marks	HSC content – focus area
16 (a)	2	Working in the industry — employment – page 43
16 (b)	5	Working in the industry — primary industries worker – pages 43–44
17 (a)	2	Sustainability — environmental hazards identification and risk controls – page 35
17 (b)	3	Sustainability — resources – page 36
17 (c)	4	Sustainability — resources – pages 36–37
18 (a)	2	Weather — weather and climate – page 39
18 (b)	3	Weather — managing conditions – page 40
18 (c)	4	Weather — monitoring conditions – page 40
19 (a)	1	Safety — work health and safety – page 30
19 (b)	3	Safety — incidents, accidents and emergencies – page 33
19 (c)	6	Safety — risk management – page 32

**Section III**

<b>Question</b>	<b>Marks</b>	<b>HSC content – focus area</b>
20	15	Chemicals — work health and safety – page 26, chemical compliance – page 27, working with chemicals – page 28

**Section IV**

<b>Question</b>	<b>Marks</b>	<b>HSC content – focus area</b>
21 (a)	3	Livestock health and welfare — working with livestock – page 48
21 (b)	4	Livestock health and welfare — handling – page 49
21 (c)	8	Livestock health and welfare — treatment – page 50
22 (a)	3	Plant pests, diseases and disorders — management – page 53
22 (b)	4	Plant pests, diseases and disorders — management – page 54
22 (c)	8	Plant pests, diseases and disorders — management – page 54