

2014 HSC Primary Industries Marking Guidelines

Section I

Multiple-choice Answer Key

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

Section II

Question 16 (a)

Criteria	Marks
<ul style="list-style-type: none"> • Outlines a valid livestock/crop program for the week making reference to several aspects of the week's weather 	4
<ul style="list-style-type: none"> • Outlines a valid program for the week making reference to most aspects of the weather in relation to either the livestock or crop enterprise 	3
<ul style="list-style-type: none"> • Outlines a program for part of the week making reference to an aspect of the weather or implies weather is a reason for the program 	2
<ul style="list-style-type: none"> • Lists activities for part of the week 	1

Sample answer:

On Monday, Tuesday and Wednesday work tasks could include tractor work, spraying, fence repair and working with livestock in the yards. Watering points for stock should be checked, and crop irrigation should be considered to avoid heat stress. On Thursday stock should be moved to sheltered paddocks, and watering points checked to ensure water availability. Irrigation should continue to be applied to crops.

On Friday, Saturday and Sunday regular stock inspections should be made to ensure adequate feed and water are available. Crops should be checked for heat stress and irrigated if necessary.

Answers could also include:

- Information on monitoring news for fire reports on Friday, Saturday and Sunday.
- Also monitoring for unexpected changes in weather patterns.
- Employees could maintain equipment in workshops – out of the prevailing conditions.
- Fire mitigation should also occur before Thursday to minimise the risk of fire.
- Employees need to wear appropriate PPE and carry cool water. Employees should only be given indoor work after checking stock and crops.

Question 16 (b)

Criteria	Marks
<ul style="list-style-type: none"> Justifies the response to the employees in a logical and coherent manner. Clearly defines the relationship between employees' rights, the award conditions and the extreme weather conditions predicted 	5
<ul style="list-style-type: none"> Outlines the response to the employees in a logical and coherent manner. Discusses the issues for and against in their response 	3 – 4
<ul style="list-style-type: none"> Gives issues for and/or against the employees' having time off work 	2
<ul style="list-style-type: none"> Makes a relevant point 	1

Sample answer:

The supervisor could refuse to give either employee the time off. Their reasons could include the agreed roster for those days and that they have not given enough notice for their leave request. The personal reason may not justify time off. For example they both wanted to attend birthdays of their mates. The weather conditions are such that they are both needed to work. The supervisor may be prepared to offer them both time in lieu at another time when the weather is not as extreme. They may say to the employees that their reason is not covered by the award conditions thus the supervisor is within their rights to refuse the leave request on this occasion.

Question 17 (a)

Criteria	Marks
<ul style="list-style-type: none"> Correctly lists TWO sources of workplace conflict 	2
<ul style="list-style-type: none"> Correctly lists ONE source of workplace conflict 	1

Sample answer:

Two sources of workplace conflict are:

- Hours to be worked
- Interpersonal disputes.
- Pay rates
- Duties
- Equity of overtime
- Leave
- Rosters
- Leave approved
- Bullying
- Racism

Question 17 (b)

Criteria	Marks
• Provides a clear and precise method of conflict resolution in the workplace. Provides characteristics and features of the method	3
• Provides a method of resolving conflict in the workplace providing one characteristic or feature	2
• Names a method of resolving conflict	1

Sample answer:

One method of resolving workplace conflict is to have counselling between the parties involved. This could involve facilitated face-to-face meetings involving both parties, one-to-one counselling with each party and then a combined meeting of the parties, and professional development for each of the parties on appropriate workplace behaviour such as correct use of email or other forms of communication. Retraining may be offered to the employees so that they can move to another part of the business. Another way could be to move the parties to separate workplace areas or worksites to keep them apart.

Question 17 (c)

Criteria	Marks
• Explains the consequences of inappropriate workplace behavior on the workplace and employees	4
• Outlines the consequences of inappropriate workplace behavior on the workplace and employees	3
• Identifies a consequence of inappropriate behaviour in the workplace	2
• Lists inappropriate workplace behaviour	1

Sample answer

There are a range of consequences of inappropriate workplace behaviour. One such behaviour is workplace bullying. An impact of bullying in the workplace can be low worker morale. Workers could feel less than valued and their output may decline. They may also take more time off work to avoid the bullying or if sufficiently discouraged they may leave that workplace taking with them valuable knowledge and experience. People who do the bullying should be counselled on what is appropriate workplace behaviour and if subsequently found not to comply with workplace standards, they may be dismissed.

Answers could also include:

Inappropriate behaviour:

- Bullying
- Sexism
- Racism
- Coming late/leaving early
- Long lunch
- Favouritism
- Illegal activity

Consequences:

- Low morale
- Inefficient workplace
- Dismissal
- Slow work rate
- Antagonism
- Misuse of equipment, stealing – leading to prosecution
- Extended absenteeism due to effect on mental health
- Low productivity
- Increased cost of production

Question 18 (a)

Criteria	Marks
• Names and provides characteristics and features of a current environmental issue in primary industries	2
• Names a current environmental issue in primary industries	1

Sample answer:

One current environmental issue is climate change. This involves changes in the average temperature and precipitation over a long period of time. Currently it would seem that average temperatures are slowly rising and this can have an effect on crop productivity, where crops can be grown, native vegetation and biodiversity.

Answers could also include:

- Extreme rainfall events
- Acidification
- Salinity
- Global warming
- Pollution
- Drought linked to climate change

Question 18 (b)

Criteria	Marks
• Names ONE government agency and clearly outlines the agency's role in relation to environmental compliance	3
• Names ONE government agency and provides some general information	2
• Names ONE government agency responsible for environmental compliance or makes a relevant point	1

Sample answer:

One government agency that is involved in environmental compliance is the NSW Environmental Protection Authority (EPA). It is the primary environmental regulator for NSW. Its role is to improve environmental performance and waste management for NSW, and achieves this through a wide variety of programs and initiatives. The EPA works with community, business, industry and government to maintain balance between protecting the environment, managing competing demands on the environment and supporting sustainable growth. An example of compliance is the issuing of an environmental protection license which regulates pollution.

Answers could include:

EPA
Local Council
Department of the Environment
LHPA
State Water
DPI

Question 18 (c)

Criteria	Marks
• Clearly explains the difference between compliance and best practice and gives examples of each	3
• Explains the difference between environmental compliance and best practice	2
• Provides information relevant to either environmental compliance or best practice	1

Sample answer:

Environmental compliance is regulated by government. One example is *Protection of Environmental Administration Act 1991* (NSW). Any regulation specifies what a person or industry is able to do or not do in relation to particular issues. These regulations generally carry penalties for non-compliance and are legally enforceable.

Environmental best practice refers to the application of the best available knowledge and practice at a given time to the management of environmental issues. It is not regulated by law and is applied voluntarily by an industry or workplace. One example is the use of integrated pest management rather than reliance on the use of chemicals to treat pests and diseases.

Question 19 (a) (i)

Criteria	Marks
• Names ONE alternative to chemical use for pest management	1

Sample answer:

Biological control

Any IPM other than chemical – physical, management, cultural, genetic, environmental

Question 19 (a) (ii)

Criteria	Marks
• Outlines ONE advantage AND ONE disadvantage named in 19 (a) (i)	2
• Outlines ONE advantage OR disadvantage named in 19 (a) (i)	1

Sample answer:

One advantage of biological control is the reduced use of artificial chemicals to control pests. This will reduce the potential for chemical resistance to occur.

One disadvantage of biological control is that it is hard to implement in broad acre farming because of the need for large numbers of beneficial insects to control pest populations.

Question 19 (c)

Criteria	Marks
• Identifies the components of recording and reporting and makes the relationship between them and chemical use. Relates implications of recording and reporting on chemical use	4
• Provides reasons for recording and reporting and links them to chemical use. Identifies implications of recording and reporting on chemical use	3
• Outlines reporting and/or recording in relation to chemical use	2
• Makes a relevant point regarding reporting or recording in relation to chemical use	1

Sample answer:

Recording and reporting are vital in relation to chemical use. Keeping records is important for the farmer not only for inventory control but also to ensure that the chemical applied has achieved the desired outcome. Also recording chemical use allows you to see what group of chemicals you used to avoid the possibility of chemical resistance.

Keeping chemical records allows the farmer to know what quantities of a given chemical they have used and thus they can order more of that chemical before they run out.

Placing signs on paddock entrances to indicate that a chemical has been sprayed along with the date allows all people on the farm to ascertain the risk to humans and/or animals. The chemical records allow you to see what the re-entry period for the paddock would be.

Chemical records are also important in the event of an emergency, so that emergency services know what chemicals are in the immediate area.

Section III

Question 20

Criteria	Marks
<ul style="list-style-type: none"> Clearly explains relationships between label, MSDS and hazard identification and risk analysis. Provides explanation of how and why they are used to develop safe work practices 	14–15
<ul style="list-style-type: none"> Identifies relationships between label, MSDS and hazard identification and risk analysis. Provides an outline of how and/or why they are used to develop safe work practices 	11–13
<ul style="list-style-type: none"> Outlines the features of a label and MSDS and links both to hazard identification or risk analysis. Makes some reference to safe work practices 	8–10
<ul style="list-style-type: none"> Outlines the features of a label and/or MSDS and links at least one to hazard identification or risk analysis 	5–7
<ul style="list-style-type: none"> Outlines more than one feature of a label and/or MSDS 	2–4
<ul style="list-style-type: none"> Provides at least ONE feature of a label and/or MSDS 	1

Answers could include:

The importance of reading and interpreting a label/MSDS – give features of label/MSDS. Explains how the following are useful in the development of safe work practices:

Role of MSDS/Chemical label

- signal heading and precautionary statement
- active constituent and proportion
- chemical group
- chemical composition
- physical and chemical properties
- chemical role statement
- hazard statement and pictogram
- expiry date
- first aid measures
- fire fighting measures
- accidental release measures
- handling and storage
- exposure controls and PPE
- toxicological information
- ecological information
- disposal considerations
- transport information
- regulatory information
- re-entry and withholding periods
- export slaughter interval

Development of safe work practices

- correct use of PPE in preparing, mixing, using and cleaning up after use of chemical
- how to mix the chemical
- control measures needed for use of chemicals
- how to contain spill of chemical
- the impact of the chemical on the environment
- toxicity of the chemical
- emergency response to chemical accident/spill
- who to notify if there is a problem in using the chemical
- how to apply the chemical
- what chemical can be used for/not used for
- state chemical can be used in
- application rates of chemical
- when to apply the chemical – in terms of target species, weather (temperature and precipitation)
- active constituents of chemical
- group of chemical
- record keeping eg chemical register, date of use, quantity used, weather conditions at time of use, chemical used

Safe work practices could include:

- correct use of appropriate PPE when mixing, applying and cleaning up after use of chemical
- Using correct application rates of chemical
- When to use chemical – weather conditions
- Where to use chemical – waterways, avoidance of spray drift
- What can be treated with chemical
- What to do if there is a chemical spill/accident
- withholding periods
- re-entry period
- correct storage of the chemical
- record keeping of chemical storage and use
- Who to notify if there is an accident – emergency procedures
- person correctly trained to use chemicals

Section IV

Question 21 (a)

Criteria	Marks
• Names and describes a method or technique used to identify livestock	2
• Names a method or technique used to identify livestock	1

Sample answer

The national livestock identification scheme tag allows for the identification of individual animals and product trace-back to the supplier of that animal. It is a tag that is applied to the ear of an animal and is read electronically at all points in the supply chain.

Answers could include:

- Marking
- Colour
- Tattoo
- Tags
- Collar
- Ear mark, cut
- Rumen bolus
- Spray/paint
- Leg band
- Microchip
- Toe punch

Question 21 (b)

Criteria	Marks
• Clearly explains the importance of keeping records in relation to animal health. Response is logical and coherent	5
• Explains the importance of keeping records in relation to animal health. Response is logical and coherent	3–4
• Lists reasons for keeping records in relation to animal health or gives an example of a record	1–2

Sample answer

Record keeping is important in relation to animal health because it allows the owner to note changes in the health of their animals. The notes keep track of treatments, breeding, locality and genetic make-up of the flock or herd. They can help prevent the build up of disease resistance by using one method only to treat disease.

Weight changes can indicate changes in health status, body condition score and are an indicator of chronic disease in animals. An example of this is worm infestation in an animal. This can result in loss of production and ultimately death if not treated.

Question 21 (c)

Criteria	Marks
<ul style="list-style-type: none"> Explains in detail the importance of disease identification, its management, control and prevention in a logical and coherent manner. Includes implications of incorrect identification 	8
<ul style="list-style-type: none"> Explains the importance of disease identification, its management, control and prevention. Mentions implications of incorrect identification 	6–7
<ul style="list-style-type: none"> Describes disease identification and/or management and/or prevention and/or control 	4–5
<ul style="list-style-type: none"> Mentions some aspects of disease identification and/or management and/or prevention and/or control 	2–3
<ul style="list-style-type: none"> Provides a relevant point 	1

Answers could include:**Importance of disease identification**

- need process for correct identification/diagnosis
- type of sample/observation to assist diagnosis
- targeted treatment of disease
- symptoms of disease
- known disease in an area leads to regular treatment
- infectious/not infectious
- endemic or single occurrence
- individual animal or flock/herd
- type of disease eg fungal, viral, bacterial, metabolic, genetic
- implications of incorrect identification eg death of animal, spread of disease, cost of incorrect treatment

Management

- need for quarantine/biosecurity
- routine observation and sampling
- cleanliness of PPE to avoid cross-contamination
- genetic selection process
- hedgerows to control winds to reduce animal stress
- stocking rates

Control

- routine observation and sampling
- isolation of animal
- regular medication
- paddock rotation
- supplementary feeding

Prevention

- vaccination
- paddock rotation
- add trace elements to diet/soil
- quarantine / biosecurity
- drenching
- removal of poisonous weeds
- routine observation and sampling
- genetic selection process

Implications

- death
- infectious/spreading
- loss of production
- infertility
- decrease in income
- zoonoses
- Quarantine/loss of stock
- Vet costs

Question 22 (a)

Criteria	Marks
• Names and describes a characteristic or feature of a plant	2
• Names a characteristic or feature of a plant	1

Sample answer

One feature of a plant is its leaves. These are essential for the plant to photosynthesise to produce energy for plant development. Leaves occur in a range of colours, shapes and sizes. The shape of some leaves allows for water to run off quickly which helps prevent fungal diseases from developing. Leaves have veins that carry plant nutrients and moisture.

Answers could include:

- Leaf
- Petal
- Stem
- Flower
- Roots
- Fruit
- Seeds
- Runners
- Asexual reproduction
- Nitrogen fixation

Question 22 (b)

Criteria	Marks
• Clearly explains the importance and benefits of keeping records in relation to the treatment of plant pests, diseases or disorders. Response is logical and coherent	5
• Explains the importance of keeping records in relation to treatment of plant pests, diseases or disorders. Response is logical and coherent	3–4
• Lists reasons for keeping records in relation to treatment of plant pests, diseases or disorders or gives an example of a record	1–2

Sample answer

Record keeping is important in relation to plant health because it allows the owner to note changes in the health of their plants. The notes keep track of treatments, breeding, sources and genetic strains. They can help prevent the build up of disease resistance by using one method only to treat disease. Poor record keeping may allow diseases to spread and reduce output.

Changes in the appearance of leaves can indicate the type and extent of a disease on a plant or group of plants. If the progression is not recorded an incorrect diagnosis may be made which could cause loss of production from leaf or fruit drop, or death of a plant.

Question 22 (c)

Criteria	Marks
<ul style="list-style-type: none"> Explains in detail the importance of disease identification, its management, control and prevention in a logical and coherent manner. Includes implications of incorrect identification 	8
<ul style="list-style-type: none"> Explains the importance of disease identification, its management, control and prevention. Mentions implications of incorrect identification 	6–7
<ul style="list-style-type: none"> Describes disease identification and/or management and/or prevention and/or control 	4–5
<ul style="list-style-type: none"> Mentions some aspects of disease identification and/or management and/or prevention and/or control 	2–3
<ul style="list-style-type: none"> Provides a relevant point 	1

Answers could include:**Importance of disease identification:**

- need process for correct identification/diagnosis
- type of sample/observation to assist diagnosis
- targeted treatment of disease
- symptoms of disease
- known disease in an area leads to regular treatment
- infectious/not infectious
- endemic or single occurrence
- individual plant or crop
- type of disease eg fungal, viral, bacterial, allelopathy, nutritional, genetic
- implications of incorrect identification eg death of plant, spread of disease, cost of incorrect treatment

Management

- need for quarantine/biosecurity
- routine observation and sampling
- cleanliness of PPE to avoid cross-contamination
- genetic selection process
- application of specific treatments eg lime to alter pH
- companion planting
- hedgerows to control winds and limit windborne diseases

Control

- routine observation and sampling
- isolation of plant – if possible
- routine treatments
- crop rotation
- supplementary fertiliser

Prevention

- crop rotation
- add trace elements to soil
- quarantine / biosecurity
- removal of weeds
- routine observation and sampling
- genetic selection process

Implications

- loss of production
- kill plant
- reduced yield
- re-application
- resistance
- loss of income
- time consuming

Primary Industries

2014 HSC Examination Mapping Grid

Section I

Question	Marks	HSC content – focus area	Employability skills (Please put an X where appropriate)								
			Communication	Teamwork	Problem-solving	Initiative and enterprise	Planning and organising	Self-management	Learning	Technology	
1	1	Chemicals - a range of types of chemicals – page 31	x							x	
2	1	Environmental hazard identification and risk control – natural disaster – page 42	x			x	x				
3	1	Weather - monitoring conditions – air pressure page 48	x							x	x
4	1	Weather – elements of weather and climate – page 47 Monitoring conditions – interpreting weather and climate information – page 48	x		x					x	
5	1	Work sequencing – page 53			x	x	x				
6	1	Safe work practices and procedures – workplace/enterprise WHS policies and procedures – safe operating procedures – page 37			x					x	
7	1	Primary industries worker- feedback and improvement – sources of feedback – page 53	x						x		
8	1	Resources – measuring and monitoring resource consumption – page 42					x	x			
9	1	Working with chemicals – methods and techniques for measuring and calculating chemical use - calculations – page 32			x		x				x
10	1	Working in the industry – employment – page 52	x							x	
11	1	Safe work practices – working at heights – page 37			x				x	x	

Question	Marks	HSC content – focus area	Employability skills (Please put an X where appropriate)							
			Communication	Teamwork	Problem-solving	Initiative and enterprise	Planning and organising	Self-management	Learning	Technology
12	1	Employment – principles of equal employment opportunity (EEO) – page 52	x					x	x	
13	1	Risk management – difference between a hazard and a risk – page 38	x	x	x					
14	1	Environmental hazard identification and risk control – range of environmental hazards – page 42			x					x
15	1	Working with chemicals – calculations – page 32			x		x			

Section II

Question	Marks	HSC content – focus area	Employability skills (Please put an X where appropriate)							
			Communication	Teamwork	Problem-solving	Initiative and enterprise	Planning and organising	Self-management	Learning	Technology
16 (a)	4	Weather Identification of weather and climate – conditions – page 47 Managing conditions – an awareness of potential implications of weather – livestock/grazing – page 48 Primary industries workplace/enterprise planning – page 48	x	x	x	x	x			
16 (b)	5	Working in the industry – employment - page 52	x	x	x		x	x		
17 (a)	2	Working in the industry Misunderstandings and conflict – conflict in the workplace – causes of conflict – page 55	x	x					x	

Question	Marks	HSC content – focus area	Employability skills (Please put an X where appropriate)							
			Communication	Teamwork	Problem-solving	Initiative and enterprise	Planning and organising	Self-management	Learning	Technology
17 (b)	3	Working in the industry Misunderstandings and conflict – conflict management – page 55	x		x	x		x		
17 (c)	4	Working in the industry Misunderstandings and conflict – conflict in the workplace – the extent to which conflict can be positive or negative experience – page 55 Working with others – importance of teamwork – page 54 Anti-discrimination – consequences of inappropriate workplace behaviour – page 55	x		x			x	x	
18 (a)	2	Sustainability Environment – current environmental issues affecting primary industries – page 41							x	
18 (b)	3	Sustainability Environmental compliance – primary function/role of key environmental bodies – page 43	x						x	x
18 (c)	3	Sustainability Environmental compliance – definition of compliance/best practice – page 42	x	x	x	x		x	x	
19 (a) (i)	1	Chemicals Integrated pest/resistance management – alternatives to chemicals for pest/resistance management – page 33	x		x			x	x	x
19 (a) (ii)	2	Chemicals Integrated pest/resistance management – alternatives to chemicals for pest/resistance management – page 33	x		x			x	x	x

Question	Marks	HSC content – focus area	Employability skills (Please put an X where appropriate)							
			Communication	Teamwork	Problem-solving	Initiative and enterprise	Planning and organising	Self-management	Learning	Technology
19 (b)	2	Chemicals Working with chemicals – safe and effective chemical application – re-entry and withholding periods – page 33	x			x	x		x	
19 (c)	4	Chemicals Working with chemicals – purpose and importance of record keeping and reporting chemical use – page 33	x	x		x	x			x

Section III

Question	Marks	HSC content – focus area	Employability skills (Please put an X where appropriate)							
			Communication	Teamwork	Problem-solving	Initiative and enterprise	Planning and organising	Self-management	Learning	Technology
20	15	Chemicals WHS – risk management, personal protective equipment – page 31 Awareness of potential hazardous effects – page 31 Chemical compliance – handling and use of chemicals, safe work practices – page 32 Working with chemicals – use and interpret chemical labels and MSDS – page 32 Safety Safe work practices and procedures – importance, purpose, clean up procedures, hazardous substances page 37	x	x	x	x	x	x	x	x

Section IV

Question	Marks	HSC content – focus area	Employability skills (Please put an X where appropriate)							
			Communication	Teamwork	Problem-solving	Initiative and enterprise	Planning and organising	Self-management	Learning	Technology
21		Livestock health and welfare								
21 (a)	2	Identification – broad knowledge of classification methods used to identify livestock – page 58					X			X
21 (b)	5	Working with livestock – reporting and record keeping requirements – page 58	X	X	X	X				
21 (c)	8	Health – ill health in livestock – prevention and treatment strategies - page 60 Treatment – types of treatment – modes of action – page 60	X	X	X	X	X	X	X	
22		Plant pests, diseases and disorders								
22 (a)	2	Range of plants – characteristics and features - page 64					X			X
22 (b)	5	Recording and reporting – recording and reporting related to treatment and control – page 65	X	X	X	X				
22 (c)	8	Recognition of plant pests, disease and disorders – identification and assessment – page 64 Management – treatment of plant pests, diseases and disorders – page 65 Management – appropriate selection of treatment – page 65 Management – appropriate selection of control measures – page 65	X	X	X	X	X	X	X	