



NSW Education Standards Authority

2019 HIGHER SCHOOL CERTIFICATE EXAMINATION

Primary Industries

General Instructions

- Reading time – 5 minutes
- Working time – 2 hours
- Write using black pen
- Calculators approved by NESA may be used
- Write your Centre Number and Student Number at the top of pages 9 and 13

Total marks: 80

Section I – 15 marks (pages 2–6)

- Attempt Questions 1–15
- Allow about 20 minutes for this section

Section II – 35 marks (pages 9–15)

- Attempt Questions 16–20
- Allow about 50 minutes for this section

Section III – 15 marks (page 17)

- Attempt Question 21
- Allow about 25 minutes for this section

Section IV – 15 marks (pages 18–19)

- Attempt either Question 22 or Question 23
- Allow about 25 minutes for this section

Section I

15 marks

Attempt Questions 1–15

Allow about 20 minutes for this section

Use the multiple-choice answer sheet for Questions 1–15.

- 1 Which of the following is the most appropriate selection of clothing for an outdoor manual task such as hand weeding?
- A. Workboots, shorts, singlet, sunglasses
 - B. Workboots, sunglasses, long trousers, long-sleeved shirt
 - C. Workboots, shorts, short-sleeved shirt, wide-brimmed hat
 - D. Workboots, long trousers, long-sleeved shirt, wide-brimmed hat

- 2 Lindsay has been working at a local primary industries enterprise for four weeks. During that time the other workers have deliberately not included Lindsay in any professional or social conversations.

What type of bullying is Lindsay experiencing in the workplace?

- A. Physical
 - B. Psychological
 - C. Sexual
 - D. Verbal
- 3 Which row of the table correctly identifies the condition of both high pressure systems and low pressure systems in the southern hemisphere?

	<i>High pressure systems</i>	<i>Low pressure systems</i>
A.	Settled	Unstable
B.	Settled	Settled
C.	Unstable	Settled
D.	Unstable	Unstable

4 Which action would be most effective in increasing a team's productivity?

- A. Meet socially outside work to team-build.
- B. Elect the most popular worker as team leader.
- C. Evaluate the strengths and weaknesses of all team members.
- D. Match worker abilities to roles and allocate tasks accordingly.

5 The varroa mite has the potential to devastate the Australian beekeeping industry.

The awareness and reporting of exotic pests such as the varroa mite is an example of

- A. biodiversity.
- B. biosecurity.
- C. productivity.
- D. sustainability.

6 The following table shows the total annual rainfall measured over six years on a property on the mid-north coast of NSW.

Year	2002	2003	2004	2005	2006	2007
Total annual rainfall (mm)	806	895	1280	1077	834	1309

Based on the information provided in the table, what was the average annual rainfall for the property over this period?

- A. 806 mm
- B. 895 mm
- C. 1034 mm
- D. 1179 mm

7 When planning to spray for an insect infestation, what is the most effective way to minimise the potential risk of damage to neighbouring crops?

- A. Read the relevant Safety Data Sheet.
- B. Inform neighbours of your intention to spray.
- C. Ensure all livestock are removed from the area.
- D. Monitor, record and respond to weather forecasts and conditions.

- 8 What is meant by a *standard operating procedure* (SOP) for a primary industries workplace?
- A. A set of instructions outlining how to carry out tasks
 - B. A document which details legal compliance requirements
 - C. A piece of legislation to ensure compliance within the workplace
 - D. A guideline to ensure consistency of products, services and systems

- 9 A customer in a large produce store notices that fertiliser bags stacked on pallets are likely to fall and reports this to a staff member.

Who is legally responsible for minimising this risk?

- A. Workplace employee
 - B. Health and safety representative
 - C. Work health and safety committee
 - D. Person conducting a business or undertaking
- 10 A primary industries worker has received an alert from the Bureau of Meteorology predicting a change in weather conditions overnight with a dramatic drop in temperature and an increase in wind speed.

What kind of weather warning is associated with these conditions and how should this be best communicated to co-workers?

	<i>Weather warning</i>	<i>Communication method</i>
A.	Wind chill	Email
B.	Wind chill	Phone call
C.	Graziers' alert	Email
D.	Graziers' alert	Phone call

- 11 Which row of the table correctly identifies the social and economic costs of workplace injuries?

	<i>Social</i>	<i>Economic</i>
A.	Decrease in quality of life for staff	Decreased workers compensation premiums
B.	Increase in staff applications for holiday leave	Decrease in staff morale
C.	Decrease in staff morale	Loss of productivity in the workplace
D.	Loss of productivity in the workplace	Increased workers compensation premiums

- 12 When preparing soil to sow a crop on sloping land, what is the best strategy to minimise the risk of sedimentation in waterways?

- A. Plough along contours.
- B. Cover the ground with black plastic.
- C. Fill gullies and depressions with rocks.
- D. Maintain good ground cover with vegetation.

- 13 A farmer used the following chemical to spray a paddock on 29 May 2019.

<p>INSECTICIDE ‘X’ Dangerous Poison Keep out of reach of children Read safety directions before opening and using GROUP 9D INSECTICIDE Controls chewing and sucking insects on a variety of grain crops Withholding period: • 20 days for grazing • 30 days for harvest for human consumption Re-entry: 15 days</p>
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What would be the earliest date that the farmer could safely inspect the crop?

- A. 11 June 2019
- B. 14 June 2019
- C. 18 June 2019
- D. 29 June 2019

- 14 A primary industries worker has been asked to drench a flock of 800 sheep, with a weight range of 31–50 kg.

The dosage rates on a 5-litre container of a drenching product are shown.

<i>Liveweight (kg)</i>	<i>Dose (mL)</i>
10	2
11–20	4
21–30	6
31–40	8
41–50	10
51–60	12
61–70	14
71–80	16

How many 5-litre containers would be required?

- A. 1
B. 2
C. 3
D. 4
- 15 The table shows steps for calibrating chemical application equipment. The steps are not in order.

<i>Step</i>	<i>Calibration activity</i>
1	Calculate dose rate
2	Read chemical label
3	Adjust application equipment to ensure correct dose is delivered
4	Administer water from application equipment into measuring container
5	Set application equipment to dose rate and draw up water
6	Measure volume of water in measuring container

What is the correct order for these steps?

- A. 2, 1, 5, 6, 4, 3
B. 2, 1, 3, 5, 4, 6
C. 2, 1, 5, 4, 6, 3
D. 1, 2, 3, 5, 4, 6

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Centre Number

Primary Industries

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Student Number

Section II

35 marks

Attempt Questions 16–20

Allow about 50 minutes for this section

Answer the questions in the spaces provided. These spaces provide guidance for the expected length of response.

Show all relevant working in questions involving calculations.

Question 16 (7 marks)

- (a) Outline the impacts of a natural disaster on primary industries. 3

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- (b) Explain TWO work practices that could minimise the impact of wildlife habitat destruction. 4

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Question 17 (6 marks)

The table shows the weather forecast for the coming week.

November 2019	Mon 4/11	Tues 5/11	Wed 6/11	Thurs 7/11	Fri 8/11
Temperature	34°C	22°C	25°C	28°C	29°C
Chance of rain	1%	80%	80%	3%	3%
Likely amount	1–5 mm	25 mm	25 mm	1–5 mm	1–5 mm

Your supervisor has left you a list of tasks to carry out during the week.

<p>Jobs</p> <p><i>Job A:</i> repair broken wire in the orchard paddock fence</p> <p><i>Job B:</i> check stock water troughs following the emptying and cleaning completed on Sunday 3/11</p> <p><i>Job C:</i> water seedlings in the revegetation area</p> <p><i>Job D:</i> phone neighbours to remind them of the Landcare meeting on 8/11</p> <p><i>Job E:</i> clean out the chicken shed in preparation for the delivery of new layer hens at 9:00am on 6/11</p> <p><i>Job F:</i> unlock shed to allow local produce store to deliver bagged poultry feed after 12:00pm on 5/11</p>

- (a) Which is the highest priority task for Monday and for Tuesday? Justify your answer. **4**

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- (b) Your supervisor has asked you to move thirty 25 kg bags of chicken feed. Explain how the bags should be handled/moved to minimise the risk of injury. **2**

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Question 18 (4 marks)

Complete the table below outlining advantages and disadvantages of written and verbal communication.

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<i>Communication method</i>	<i>Advantages</i>	<i>Disadvantages</i>
Written		
Verbal		

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Centre Number

Primary Industries

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Student Number

Section II (continued)

Question 19 (9 marks)

- (a) Explain why *pre-operative processes* are necessary when using chemical application equipment. 3

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- (b) Explain why *post-operative processes* are necessary when using chemical application equipment. 3

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- (c) Justify the need for keeping accurate chemical records. 3

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Question 20 (9 marks)

A major chemical spill occurs while a truck is unloading concentrated liquid fertiliser on a farm.

The truck has the following sign displayed.

Hazchem Information Guide											
LIQUID FERTILISER											
UN No. 1005											
HAZCHEM 3Y											
IN EMERGENCY DIAL 000, POLICE or FIRE BRIGADE		*Environmentally hazardous substance *Toxic to aquatic life									
Extinguishing medium to be used <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 25px;">1</td> <td style="width: 100px;">Jets</td> <td style="width: 25px;">2</td> <td style="width: 100px;">Fog</td> </tr> <tr> <td>3</td> <td>Foam</td> <td>4</td> <td>Dry agent</td> </tr> </table>		1	Jets	2	Fog	3	Foam	4	Dry agent	Notes for guidance: FOG In the absence of fog equipment, a fine spray may be used. DRY AGENT Water must not be allowed to come into contact with the substance at risk. V Can be violently or even explosively reactive. FULL Full body protective clothing with BA. BA Breathing apparatus plus protective gloves. DILUTE May be washed to drain with large quantities of water.	
1	Jets	2	Fog								
3	Foam	4	Dry agent								
Hazchem Code											
P	V	FULL	DILUTE								
R											
S	V	BA									
T		BA	CONTAIN								
W	V	FULL									
X											
Y	V	BA									
Z		BA									
E		CONSIDER EVACUATION									
* Containment: prevent, by any means available, spillage from entering drains or waterways											

(a) Identify the personal protective equipment (PPE) required to clean up the spill. **2**

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Question 20 continues on page 15

Question 20 (continued)

- (b) Describe workplace procedures required to respond to the chemical spill. **3**

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- (c) Explain the environmental issues that could arise due to the spill. **4**

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End of Question 20

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Primary Industries

Section III

15 marks

Attempt Question 21

Allow about 25 minutes for this section

Answer the question in a writing booklet. Extra writing booklets are available.

Your answer will be assessed on how well you:

- demonstrate knowledge and understanding relevant to the question
 - communicate ideas and information using relevant workplace examples and industry terminology
 - present a logical and cohesive response
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Question 21 (15 marks)

Explain how the use of an Integrated Pest Management (IPM) program maximises production and ensures environmental sustainability.

Please turn over

Section IV

15 marks

Attempt either Question 22 or Question 23

Allow about 25 minutes for this section

Answer the question in a SEPARATE writing booklet. Extra writing booklets are available.

Question 22 — Livestock Health and Welfare (15 marks)

THE SCHOOL FARM

Attention Visitors

Please respect our farm environment.
You, your vehicle, machinery or animals can carry seeds,
dirt, pests or diseases.

Do not enter without contacting us.

0123 456 789

- (a) Describe strategies for dealing with animal residue and waste in a primary industries enterprise. **5**
- (b) Explain measures that could be implemented as part of a biosecurity plan to minimise the spread of disease among livestock. **10**

OR

Question 23 — Plant Pests, Diseases and Disorders (15 marks)

THE SCHOOL FARM

Attention Visitors

Please respect our farm environment.
You, your vehicle, machinery or animals can carry seeds,
dirt, pests or diseases.

Do not enter without contacting us.
0123 456 789

- (a) Describe strategies for dealing with diseased plant material and waste in a primary industries enterprise. **5**
- (b) Explain measures that could be implemented as part of a biosecurity plan to minimise the spread of weeds. **10**

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