

**B O A R D O F S T U D I E S**  
NEW SOUTH WALES

**2009**

**HIGHER SCHOOL CERTIFICATE  
EXAMINATION**

# Primary Industries

## General Instructions

- Reading time – 5 minutes
- Working time – 2 hours
- Write using black or blue pen
- Board-approved calculators may be used
- Write your Centre Number and Student Number at the top of pages 9, 11, 13 and 15

**Total marks – 80**

**Section I** Pages 2–7

**15 marks**

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

**Section II** Pages 9–17

**35 marks**

- Attempt Questions 16–19
- Allow about 45 minutes for this section

**Section III** Page 19

**30 marks**

- Attempt TWO questions from Questions 20–22
- Allow about 1 hour for this section

## Section I

15 marks

Attempt Questions 1–15

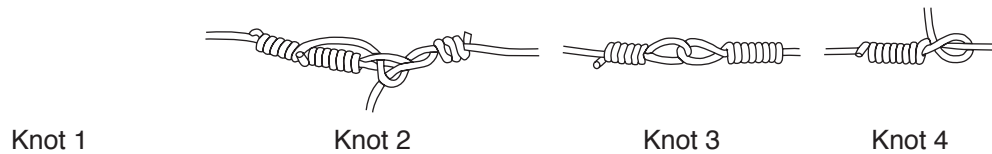
Allow about 15 minutes for this section

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

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- 1 Whose responsibility is it to report missing or damaged PPE?
  - (A) Employee
  - (B) Employer
  - (C) Neighbour
  - (D) WorkCover
  
- 2 Your workmate has accidentally cut off two fingers. He is bleeding heavily.  
Which item in the first aid kit would you use first?
  - (A) Mask
  - (B) Gloves
  - (C) Gauze dressing
  - (D) Triangular bandage
  
- 3 You have found a person who is not breathing. What is the correct procedure to be followed when using CPR?
  - (A) 2 breaths to 10 compressions
  - (B) 2 breaths to 20 compressions
  - (C) 2 breaths to 30 compressions
  - (D) 2 breaths to 40 compressions

- 4 Which row in the table correctly identifies the knots illustrated?



	Knot 1	Knot 2	Knot 3	Knot 4
(A)	Bullwire	Pin and Loop	Figure of 8	Double Loop
(B)	Pin and Loop	Bullwire	Figure of 8	Double Loop
(C)	Figure of 8	Pin and Loop	Double Loop	Bullwire
(D)	Figure of 8	Bullwire	Double Loop	Pin and Loop

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- 5 A six-strand fence, 78 metres long, is being constructed. The wire costs \$88.50 per 500 m. A one metre tie-off is required at each end for each strand and the cost is based on the metres of wire required.

How much will the wire for the fence cost?

- (A) \$82.84  
 (B) \$83.90  
 (C) \$84.96  
 (D) \$88.50
- 6 During routine maintenance of a farm tractor, sump oil leaked into a creek.

Under which Act could the farmer be prosecuted?

- (A) *Pesticides Act 1999* (NSW)  
 (B) *Occupational Health and Safety Act 2000* (NSW)  
 (C) *Protection of the Environment Operations Act 1997* (NSW)  
 (D) *Threatened Species Conservation Amendment Act 2002* (NSW)

Use the following information to answer Questions 7 and 8.

**Climate data at the town of Fairdale**

<i>Month</i>	<i>J</i>	<i>F</i>	<i>M</i>	<i>A</i>	<i>M</i>	<i>J</i>	<i>J</i>	<i>A</i>	<i>S</i>	<i>O</i>	<i>N</i>	<i>D</i>
<i>Mean Max (°C)</i>	26.4	25.9	22.7	18.5	14.1	10.5	9.4	10.9	13.9	17.4	20.9	24.4
<i>Mean Min (°C)</i>	13.2	13.1	10.5	7.2	4.7	2.5	1.4	2	4.2	6.5	8.9	11.2
<i>Number of Frost Days</i>	0	0	0	0.5	1.9	5.6	9.2	7.4	2.6	0.6	0	0

- 7 What is the average of the differences between the maximum and minimum temperatures for winter (June, July and August)?
- (A) 1.5 °C  
 (B) 5.9 °C  
 (C) 8.0 °C  
 (D) 8.3 °C
- 8 The following table shows the optimum number of frost days per year required to maximise production for four varieties of fruit.

	<i>Variety 1</i>	<i>Variety 2</i>	<i>Variety 3</i>	<i>Variety 4</i>
<i>Number of frost days required to maximise fruit production</i>	25	30	35	40

Which variety would you grow at Fairdale to have maximum fruit production?

- (A) Variety 1  
 (B) Variety 2  
 (C) Variety 3  
 (D) Variety 4

- 9 Dryland salinity has been diagnosed as an environmental concern on a number of properties in an area.

Which of the following is the most likely cause?

- (A) Overcultivation and overstocking
- (B) Extreme weather events due to global warming
- (C) Sediment and nutrient discharge into waterways
- (D) Rising water table due to extensive land clearing

- 10 Listed below are the eight steps required to install a gate in a new fence.

The steps are not in the correct order.

- |   |
|---|
| <p>Step 1: Fit top hinge</p> <p>Step 2: Determine bottom hinge height for required gate clearance</p> <p>Step 3: Locate and fit latch</p> <p>Step 4: Determine gate size to meet operational needs</p> <p>Step 5: Level gate by adjusting hinges</p> <p>Step 6: Set posts to produce gate opening plus allowances for hinges</p> <p>Step 7: Measure and level location of top hinge</p> <p>Step 8: Fit bottom hinge</p> |
|---|

Which of the following lists the first four steps in the correct order?

- (A) 2, 8, 5, 7
- (B) 4, 6, 2, 8
- (C) 6, 4, 1, 3
- (D) 8, 1, 3, 5

- 11 A person is employed for 80 hours. The pay rate is \$13.19 per hour, the taxation rate is 15% and the employer pays 9% of the gross pay into a superannuation fund.

Which row indicates the correct tax, superannuation and net pay amounts to be paid by the employer?

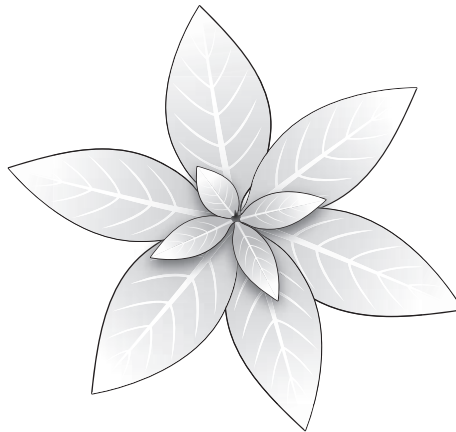
	Tax paid	Superannuation	Net Pay
(A)	\$130.68	\$78.41	\$740.52
(B)	\$158.28	\$94.97	\$896.92
(C)	\$158.28	\$94.97	\$1055.20
(D)	\$158.28	\$80.72	\$896.92

- 12 Which part of the human body has the highest chemical absorption rate?

- (A) Eyes
- (B) Feet
- (C) Forearm
- (D) Scalp

- 13 An infestation of the weed shown has been found growing in a cereal crop.

Following harvest, a broadleaf crop will be sown as part of the crop rotation program.



Which type of herbicide would be the most appropriate to use on the weed?

- (A) Broadleaf
- (B) Narrow leaf
- (C) Persistent broadleaf
- (D) Broad spectrum knockdown

- 14 The following employment advertisement appeared in a local rural newspaper.

**Station Overseer**

'Abmirrem' is a 15000 ha dryland farming, sheep and cattle operation comprising 2500 ha of broadacre dryland farming, 6000 merino ewes, 2000 wethers and 500 breeding cows.

We require a young, single male to take a leading role in the future development of our business. Must have extensive experience in broadacre cropping and livestock production.

On top of an attractive salary, full board and lodging are available.

Your application should be submitted to:  
The Manager  
'Abmirrem'  
PO Box 1234  
Arwon, NSW

Which Act does this advertisement breach?

- (A) *Sex Discrimination Act 1984 (Cth), Anti-Discrimination Act 1977 (NSW)*
  - (B) *Racial Discrimination Act 1977 (NSW), Sex Discrimination Act 1984 (Cth)*
  - (C) *Disability Discrimination Act 1992 (Cth), Anti-Discrimination Act 1977 (NSW)*
  - (D) *Equal Opportunity for Women in the Workplace Act 1999 (Cth), Disability Discrimination Act 1992 (Cth)*
- 15 In relation to the use of chemicals, which of the following best describes 'risk'?
- (A) Possibility of using chemicals after the expiry date
  - (B) Probability of chemical contamination in a workplace
  - (C) Consequences of a chemical accident within the workplace
  - (D) Consequences of an investigation into a chemical poisoning incident

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Primary Industries

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Centre Number

Section II

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Student Number

35 marks

Attempt Questions 16–19

Allow about 45 minutes for this section

Answer the questions in the spaces provided.

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Question 16 (9 marks)

A farmer is planning to spray with a chemical to control some weeds on the property. On the eastern boundary there is a neighbouring farm.

- (a) What are the factors to consider before spraying, other than the weather? 2

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- (b) The table shows a weather forecast.

Day	Min/Max Temp	Chance of Rain/Likely amount	Frost Risk	9 am		3 pm	
				Wind	RH	Wind	RH
Mon	-2°C – 15°C	50% 1–5 mm	Severe	SE 25 km/h	22%	SE 33 km/h	22%
Tue	3°C – 18°C	20% <1 mm	Moderate	SE 5 km/h	38%	SE 12 km/h	33%
Wed	3°C – 20°C	70% 5–10 mm	Moderate	ENE 11 km/h	49%	NNE 13 km/h	37%
Thu	5°C – 18°C	80% 10–20 mm	Moderate	NE 22 km/h	59%	ENE 23 km/h	83%
Fri	6°C – 19°C	70% 1–5 mm	Slight	NNW 19 km/h	64%	W 25 km/h	69%

RH = relative humidity

- (i) Using the data in the table, select the best day for spraying. 1

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- (ii) Provide THREE reasons for your answer in part (b) (i). 3

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Question 16 continues on page 10

Question 16 (continued)

- (c) Identify SIX items that are required to be recorded on a spray application record as directed by the *Pesticides Act 1999* (NSW). **3**

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**End of Question 16**

# Primary Industries

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Centre Number

## Section II (continued)

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Student Number

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### Question 17 (9 marks)

A person has fallen into flood waters while attempting to move animals to higher ground via a flooded waterway.

- (a) As a potential rescuer, list TWO important factors that you should take into consideration in assessing this emergency situation. **2**

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- (b) Justify the choice of these factors. **4**

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**Question 17 continues on page 12**

Question 17 (continued)

- (c) The person is rescued from the waterway unconscious. Describe the first aid steps that should be taken to assist them. **3**

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**End of Question 17**

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Centre Number

Section II (continued)

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Student Number

**Question 18** (9 marks)

- (a) Identify **THREE** hazards associated with operating a tractor, and a different risk associated with each hazard. **3**

Hazard	Risk
1..... .....	1..... .....
2..... .....	2..... .....
3..... .....	3..... .....

**Question 18 continues on page 14**

Question 18 (continued)

- (b) For ONE of the hazards identified in part (a), list THREE potential control measures in order from most effective to least effective. **3**

Hazard: .....
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**Control Measure**

1 .....
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2 .....
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3 .....
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- (c) Justify the order in which you have placed these control measures. **3**

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**End of Question 18**

Primary Industries

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Centre Number

Section II (continued)

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Student Number

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Question 19 (8 marks)

Please turn over

**Question 19** (8 marks)

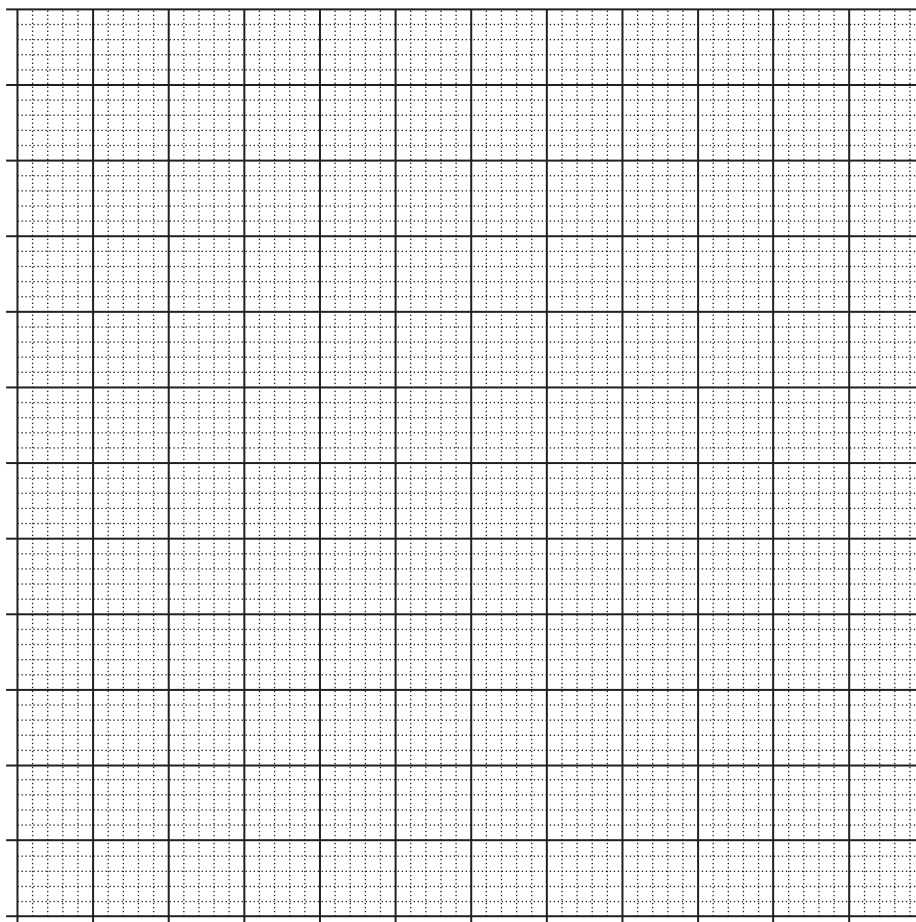
The following table gives residue data for a common insecticide used on fruit and vegetable crops.

**Residue data for insecticide A**

Days after application	Residue levels of Insecticide A ( $\mu\text{g}/\text{kg}$ )
1	1000
3	550
6	400
9	350
12	250
15	175
18	100
21	50

(a) Graph the data using a line graph.

**4**



**Question 19 continues on page 17**



Question 19 (continued)

- (b) Using the information in part (a) and the Maximum Residue Level (MRL) data in the table shown, which crop will have residues below the MRL at Day 13? **1**

**Maximum Residue Levels**

Crop	MRL ( $\mu\text{g}/\text{kg}$ )
Strawberry	50
Banana	100
Tomato	300

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- (c) Describe the possible consequences of harvesting strawberries at Day 13. **3**

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**End of Question 19**

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## Primary Industries

### Section III

**30 marks**

**Attempt TWO questions from Questions 20–22**

**Allow about 1 hour for this section**

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

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In your answers you will be assessed on how well you:

- demonstrate relevant knowledge and understanding
  - communicate ideas and information, using precise industry terminology and appropriate workplace examples
  - organise information in a well-reasoned and cohesive response
  - solve proposed issues or problems
- 

#### **Question 20** (15 marks)

Name a weed you have studied and describe the characteristics that make it successful. Evaluate a range of measures which could be used to control the weed in an integrated weed management program.

#### **Question 21** (15 marks)

Describe the potential environmental and OHS hazards and risks associated with the construction of a fence across a creek. Evaluate a range of measures that could be implemented to minimise these hazards and risks.

#### **Question 22** (15 marks)

Discuss the sources of information that you could use to prepare for an extreme weather event. Evaluate the actions that could be implemented to reduce the effects of an extreme weather event for a specific enterprise.

**End of paper**

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