



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

**2004**

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, 15, 17 and 21

**Total marks – 80**

**Section I** Pages 2–6

**15 marks**

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

**Section II** Pages 9–21

**35 marks**

- Attempt Questions 16–20
- Allow about 45 minutes for this section

**Section III** Page 23

**30 marks**

- Attempt TWO questions from Questions 21–23
- 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.

Select the alternative A, B, C or D that best answers the question. Fill in the response oval completely.

**Sample:**  $2 + 4 =$  (A) 2 (B) 6 (C) 8 (D) 9  
A  B  C  D

If you think you have made a mistake, put a cross through the incorrect answer and fill in the new answer.

A  B  C  D

If you change your mind and have crossed out what you consider to be the correct answer, then indicate the correct answer by writing the word *correct* and drawing an arrow as follows.

A  B  C  D   
*correct* ↙

---

- 1** Why should details be repeated to a customer in a telephone conversation?
- (A) To demonstrate friendliness
  - (B) To keep the conversation flowing
  - (C) To ensure that they are a genuine customer
  - (D) To confirm understanding of what has been said
- 2** Which of the following is NOT a basic requirement for the welfare of animals?
- (A) Livestock being economically viable
  - (B) Livestock being protected from predators
  - (C) Livestock having access to sufficient water
  - (D) Livestock having an adequate level of nutrition
- 3** How much material is required to absorb a 15-litre water-based chemical spill on a non-absorbent surface if 2 kg of absorbent is required for every 1 litre of chemical spilled?
- (A) 7.5 kg
  - (B) 15 kg
  - (C) 30 kg
  - (D) 150 kg
- 4** Which of the following is NOT an offence under the NSW Pesticides Act (1999)?
- (A) Possession of or use of an unregistered pesticide
  - (B) Use of chemicals where other methods could be used
  - (C) Damage to threatened species as a result of pesticide use
  - (D) Failure to read or have explained a pesticide label prior to use
- 5** Which of the following events is most likely to occur if worn nozzles are used in spray equipment?
- (A) Application of too much chemical
  - (B) Application of too little chemical
  - (C) Increase in the amount of spray drift
  - (D) Occurrence of more blockages in the nozzle

- 6 Which of the following is a correct definition for the term ESI (Export Slaughter Interval)?
- (A) The time that must elapse between slaughter of livestock and their export
  - (B) The time that must elapse between the application of a chemical to an animal and its slaughter for export
  - (C) The time that must elapse between the slaughter of an animal and its consumption in an overseas market
  - (D) The time that must elapse between the application of a chemical to an animal and the export of its meat
- 7 What is the purpose of an adjuvant?
- (A) To enhance the effectiveness of an agricultural chemical
  - (B) To assist in the breakdown of an agricultural chemical
  - (C) To provide a chemical marker for an agricultural chemical
  - (D) To inhibit the effect of an agricultural chemical on non-target species
- 8 What is the main purpose of calibrating a pesticide sprayer?
- (A) To ensure that the recommended rate of chemical is being applied
  - (B) To ensure that the concentration of the chemical in the tank is correct
  - (C) To ensure that the travelling speed of the sprayer is appropriate
  - (D) To ensure that the spray height allows optimal chemical coverage
- 9 There are a number of steps an employer can take to ensure successful occupational health and safety (OHS) in the workplace.

Which of the following steps are required under OHS legislation?

- (A) Consultation, risk assessment, arbitration
- (B) Induction and training, cost calculation, record keeping
- (C) Risk assessment, consultation, litigation
- (D) Induction and training, consultation, risk assessment

- 10** What information about a chemical is provided by its Material Safety Data Sheet (MSDS)?
- (A) Composition, hazards, safe handling and first-aid procedures
  - (B) Hazards, precautions for use, cost of the chemical and composition
  - (C) Precautions for use, hazards, first-aid procedures and reputable supplier
  - (D) Safe handling, suitable alternative chemicals, first-aid procedures and composition

- 11** While working on a farm, an employee is hit in the eye by a small hot metal shaving from a lathe.

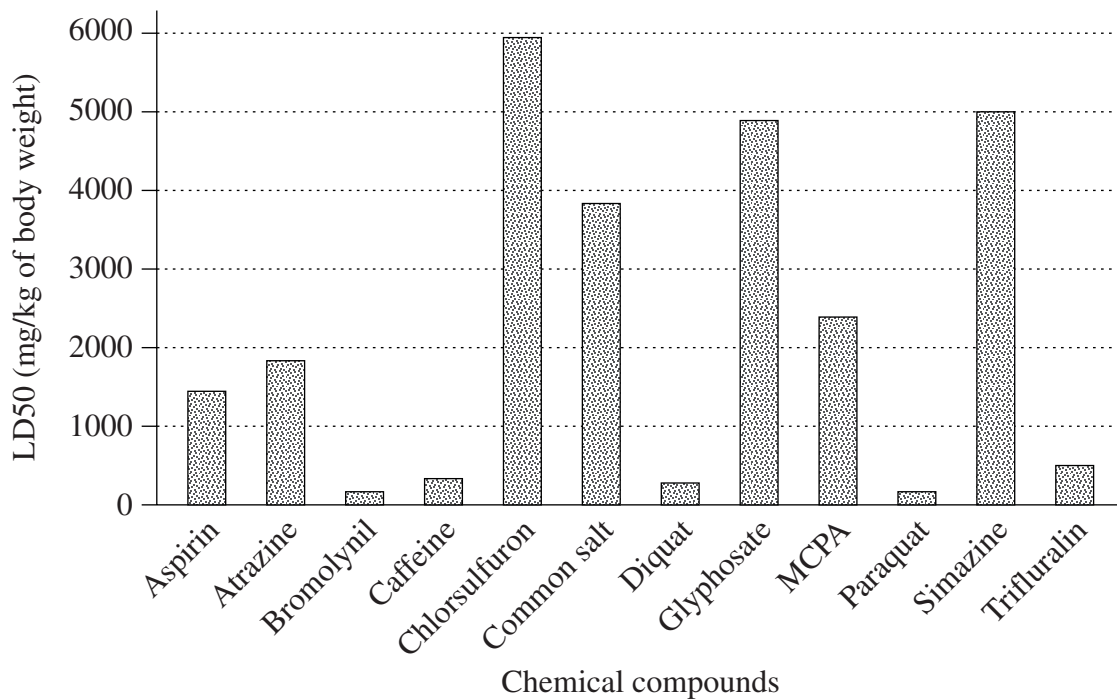
Which of the following is the most suitable procedure to deal with this situation?

- (A) Wash the eye with clean water and cover the eye with a dressing, ensuring that the dressing does not apply pressure to the injured eye.
  - (B) Try to remove the object with a magnet and cover the eye with a dressing, ensuring that the dressing does not apply pressure to the injured eye.
  - (C) Lay the casualty on a stretcher and wash the eye with a sterile solution before removing the object.
  - (D) Cover both eyes with a dressing, ensuring that the dressing does not apply pressure to the injured eye.
- 12** A farmer wishes to spray a rectangular paddock that is 250 metres long and 100 metres wide. The capacity of the spray tank is 100 L. The mixed chemical is applied at 200 L/ha.

How many tank loads will be required to spray the paddock?

- (A) 2
  - (B) 2.5
  - (C) 5
  - (D) 50
- 13** What is the main difference between an Enterprise Agreement and an Award?
- (A) An Award must comply with state or federal legislation, while an Enterprise Agreement does not have to.
  - (B) An Enterprise Agreement can be a verbal agreement, while an Award must be filed as a legal document.
  - (C) An Award applies across an industry or type of work, while an Enterprise Agreement applies to specific tasks or workplaces.
  - (D) An Enterprise Agreement is not available to union members and is voluntary, while all workers are entitled to conditions detailed under an Award.

- 14 The graph below shows the lethal dose to 50% of rats (LD50) for some chemical compounds.



Which of the following alternatives correctly lists chemical compounds from LEAST toxic to MOST toxic?

- (A) Caffeine, common salt, aspirin, simazine  
 (B) Aspirin, atrazine, bromolynil, caffeine  
 (C) Paraquat, aspirin, MCPA, chlorsulfuron  
 (D) Glyphosate, atrazine, caffeine, paraquat
- 15 Using the information provided in the table below, determine the cost of diesel fuel for one week of harvesting.

<i>Implement</i>	<i>Fuel type</i>	<i>Fuel cost (cents/litre)</i>	<i>Usage rate (litres/hour)</i>	<i>Usage (hours/week)</i>
Truck	Diesel	90	5	40
Tractor	Diesel	90	6	20
Header	Diesel	90	10	50

- (A) \$99.00  
 (B) \$738.00  
 (C) \$820.00  
 (D) \$73 800.00

BLANK PAGE

BLANK PAGE



--	--	--	--	--	--

Centre Number

**Section II**

--	--	--	--	--	--	--	--	--	--

Student Number

**35 marks**  
**Attempt Questions 16–20**  
**Allow about 45 minutes for this section**

Answer the questions in the spaces provided.

---

**Marks**

**Question 16 (6 marks)**

You are asked to supervise an employee on a neighbouring farm in vaccinating 300 yarded steers with seven-in-one vaccine.

**6**

Construct an ordered set of safe operating procedures, covering at least four stages, to complete the task.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

BLANK PAGE

# Primary Industries

--	--	--	--	--

Centre Number

## Section II (continued)

--	--	--	--	--	--	--	--	--

Student Number

---


### Question 17 (8 marks)

**Please turn over**

**Question 17 (8 marks)**

Refer to the sample emergency panel placard for bulk transport, and the Hazchem code below, to answer parts (a)–(b) on page 13.

**Emergency panel placard for bulk transport**

ORGANOPHOSPHOROUS PESTICIDES, LIQUID, TOXIC, N.O.S		
UN No:	<b>3018</b>	
Hazchem	<b>3WE</b>	
		SPECIALIST ADVICE CHEMICAL COMPANY NAME PHONE

**Hazchem codes with notes for guidance**

Notes for guidance		Notes for guidance for fire or spillage	
<b>FOG</b> In the absence of fog equipment, a fine spray may be used.		1. JETS	3. FOAM
<b>DRY AGENT</b> Water must not be allowed to come into contact with the substance at risk.		2. FOG	4. DRY AGENT
<b>V</b> Can be violently or even explosively reactive.		P V	FULL
<b>FULL</b> Full body protective clothing with BA.		R	
<b>BA</b> Breathing apparatus plus protective gloves.		S V	BA
<b>DILUTE</b> May be washed to drain with large quantities of water.		S V	BA for FIRE only
<b>CONTAIN</b> Prevent, by any means available, spillage from entering drains or watercourses.		T	BA
		T	BA for FIRE only
		W V	FULL
		X	
		Y V	BA
		Y V	BA for FIRE only
		Z	BA
		Z	BA for FIRE only
		E	CONSIDER EVACUATION

Managing Chemical Use, Smart Training Reference Manual, NSW Agriculture, 2000.

**Question 17 continues on page 13**

Question 17 (continued)

- (a) Outline the critical information from the emergency panel placard that could be used in the case of an emergency. **3**

.....  
.....  
.....  
.....  
.....  
.....

- (b) Using the information supplied on page 12, describe the hazards and control measures associated with a spill of this chemical. **5**

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

**End of Question 17**

BLANK PAGE

# Primary Industries

--	--	--	--	--

Centre Number

## Section II (continued)

--	--	--	--	--	--	--	--	--

Student Number

**Marks**

### Question 18 (8 marks)

- (a) Calculate the amount of chemical required to treat a 25-hectare paddock, applied at a rate of 1.5 L/ha. **1**

.....

- (b) Describe possible implications of applying chemicals at too low or too high a rate to weeds. **3**

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

- (c) Identify the main features of an Integrated Pest Management (IPM) program. **4**

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

BLANK PAGE



# Primary Industries

--	--	--	--	--

Centre Number

## Section II (continued)

--	--	--	--	--	--	--	--	--

Student Number

---

### Question 19 (7 marks)

**Please turn over**

Question 19 (7 marks)

Use the AAA insecticide chemical label information to answer parts (a)–(c) on page 19.

AAA insecticide — directions for use

Awaiting Copyright Clearance

Question 19 continues on page 19

Question 19 (continued)

Use information from the label on page 18 to answer parts (a)–(c).

- (a) A farmer in NSW has identified damage to pastures by Corbies. 1

What options does a farmer have to control this pest in NSW?

.....  
.....

- (b) Define the term *Withholding Period* (WHP), and explain the implications for a dairy farmer who is considering grazing a milking herd on lucerne pasture treated with AAA insecticide four days previously. 3

.....  
.....  
.....  
.....  
.....  
.....

- (c) A cereal grower in Queensland stores grain for three months and needs to control Confused Flour Beetle. 3

How much AAA concentrate should be used to treat 500 tonnes of grain? (Show working.) Describe how the concentrate should be applied.

.....  
.....  
.....  
.....  
.....

**End of Question 19**

BLANK PAGE

# Primary Industries

--	--	--	--	--

Centre Number

## Section II (continued)

--	--	--	--	--	--	--	--	--	--

Student Number

**Marks**

### Question 20 (6 marks)

A farm employee earns \$12.65 per hour for a 40-hour week plus time-and-a-half for weekend work.

- (a) Calculate the employee's gross earnings for a 40-hour week. **1**

.....

.....

- (b) An employer must contribute the equivalent of 9% of an employee's gross earnings to a superannuation scheme. **2**

Calculate the total cost to the employer when an employee works a 40-hour week. (Show working.)

.....

.....

.....

.....

- (c) The tax rate for this employee is 38 cents in every dollar. **3**

Calculate the employee's net pay when working a 40-hour week, plus four hours on Sunday. (Show working.)

.....

.....

.....

.....

BLANK PAGE

## Primary Industries

### Section III

**30 marks**

**Attempt TWO questions from Questions 21–23**

**Allow about 1 hour for this section**

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

---

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 21** (15 marks)

A truck delivering 200-litre drums of a highly toxic chemical to a farm slips off a farm bridge, spilling the chemical.

Describe procedures to be followed by the first person at the scene of the accident. Analyse the potential short-term and long-term consequences of this spillage.

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

Identify TWO potentially hazardous farm practices. Describe the risks associated with each of these practices. Analyse the processes to be used in assessing risks and implementing control measures.

#### **Question 23** (15 marks)

Describe factors that need to be considered for the safe storage, handling, use and disposal of agricultural chemicals. Explain the importance of these factors and how they assist in meeting legislative requirements in NSW.

**End of paper**

BLANK PAGE