

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

2002

**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, 13, 15 and 17

Total marks – 80

Section I Pages 2–6

15 marks

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

Section II Pages 9–17

35 marks

- Attempt Questions 16–21
- Allow about 45 minutes for this section

Section III Pages 19–20

30 marks

- Attempt TWO questions from Questions 22–24
- 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** Roll-over protection structures (ROPS) are part of safety equipment compulsory on farm tractors.

Who is initially responsible for providing ROPS on new tractors?

- (A) The manufacturer
- (B) The farmer
- (C) The machinery dealer
- (D) The installer

- 2** How should agricultural pesticides be stored?

- (A) In special lined containers
- (B) In the original closed containers
- (C) In unlabelled containers
- (D) In triple-rinsed used chemical containers

- 3** A protective guard was damaged when an operator was using a piece of equipment.

What should the operator do?

- (A) Immediately stop the equipment and advise the supervisor.
- (B) Continue working but at a slower speed.
- (C) Report directly to the supervisor when the job is finished.
- (D) Continue working but avoid unguarded moving parts.

- 4** Which of the following is the approved method for disposing of used chemical containers?

- (A) Rinse them and stack them in the shed.
- (B) Burn them in an open space.
- (C) Dispose of them at a council waste disposal depot.
- (D) Triple rinse and deliver them to the nearest drum muster site.

- 5** As the result of a safety audit you are asked to put in place a risk minimisation program using a hierarchy of hazard control methods, such as:

Method 1: Elimination of the hazard
Method 2: Personal protective equipment
Method 3: Administrative controls
Method 4: Engineering controls

In what order would you normally apply these controls?

- (A) 1, 2, 3, 4
(B) 1, 4, 3, 2
(C) 3, 2, 4, 1
(D) 4, 3, 2, 1
- 6** Who has primary responsibility for maintaining a safe workplace, under the NSW Occupational Health and Safety Act (2000)?
- (A) WorkCover
(B) The employee
(C) The union
(D) The employer
- 7** Driving a tractor down a steep incline can be very dangerous.
What should an operator do to drive safely down a slope?
- (A) Travel at the same speed as on flat ground.
(B) Engage a lower gear and lower the engine speed of the tractor before proceeding.
(C) Travel at an angle across the slope.
(D) Proceed down the slope, changing gears when necessary.
- 8** What should the operator do first in the case of a chemical spill?
- (A) Wash the spill down with water.
(B) Isolate and contain the spill.
(C) Spread earth over the spillage area.
(D) Call the fire brigade.

- 9** Listed below are five procedures that need to be carried out to minimise the risk of accidents when working with machinery.

Procedure 1: Carry out pre-start safety checks.

Procedure 2: Carry out post-operation maintenance.

Procedure 3: Read the operator's manual.

Procedure 4: Use the appropriate PPE.

Procedure 5: Operate the machinery.

In what order should they be carried out?

- (A) 3, 4, 5, 1, 2
(B) 1, 2, 3, 4, 5
(C) 4, 1, 2, 5, 3
(D) 3, 4, 1, 5, 2
- 10** Dangerous work practices can be costly to a farm business. What is the most appropriate action that farmers should take when becoming aware of a dangerous work practice?
- (A) Continue the practice until an accident occurs.
(B) Seek information about a suitable training course.
(C) Carry out a safety audit and develop safe working procedures.
(D) Buy new machinery.
- 11** Prioritise the following list of activities which have been given to you by your employer.
- Activity 1: Warn the contract harvester about recently installed power lines.
Activity 2: Check the water trough in the ram shed.
Activity 3: Order materials for the fencing program.
Activity 4: Clean out the woolshed for tomorrow's crutching.
- (A) 2, 1, 3, 4
(B) 4, 3, 1, 2
(C) 1, 4, 3, 2
(D) 1, 2, 4, 3

12 A farmer treats an animal for internal parasites using an animal health product with a withholding period of 28 days.

Which of the following activities should NOT be done within 28 days?

- (A) Withhold the animal from livestock auctions.
- (B) Put the animal with other untreated animals.
- (C) Slaughter the animal for human consumption.
- (D) Treat the animal with another animal health product.

13 The use of hazardous substances in NSW is controlled by

- (A) training courses for farmers.
- (B) State legislation, regulations and/or codes of practice.
- (C) advice from rural sales representatives.
- (D) national Occupational Health and Safety regulations and local council regulations.

14 Which of the following sets of factors needs to be considered to minimise spray drift?

- (A) Pressure, temperature, wind speed and droplet size
- (B) Pressure, wind speed, droplet size and the phase of the moon
- (C) Pressure, temperature, droplet size and dilution rate
- (D) Pressure, wind speed, droplet size and age of equipment

15 Which of the following best describes the process of calibration?

- (A) Determining the speed at which a spray unit should travel
- (B) Determining how much water to add to a spray unit
- (C) Determining accurately the output per area of a spray unit
- (D) Adding the right amount of chemical to a spray unit

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Primary Industries

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Centre Number

Section II

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Student Number

35 marks

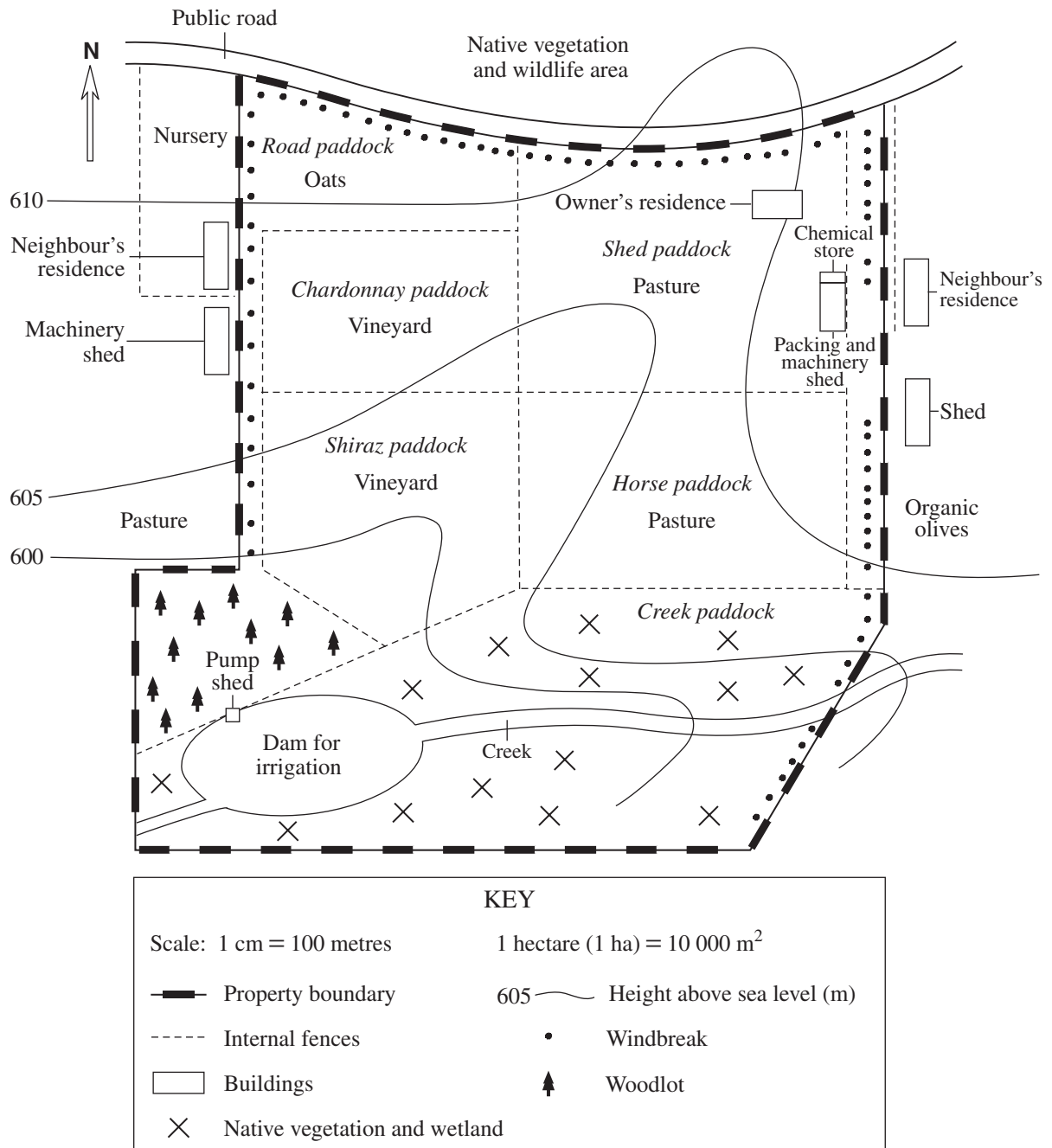
Attempt Questions 16–21

Allow about 45 minutes for this section

Answer the questions in the spaces provided.

Please turn over

Use the plan of Cudgegong Farm provided to answer Questions 16 and 17.



Question 16 (8 marks)

(This question relates to the diagram on page 10.)

The owner of Cudgegong Farm wishes to spray the *Horse paddock* with a non-selective herbicide, before sowing a winter crop in February.

- (a) Name TWO sensitive areas from the plan (one from an altitude higher than the *Horse paddock* and one from an altitude lower than the *Horse paddock*) that could be affected by the spraying activity.

Sensitive area at an altitude higher than the *Horse paddock*.

..... **1**

Sensitive area at an altitude lower than the *Horse paddock*.

..... **1**

- (b) For each area nominated in part (a), describe how the chemical could move to that area. **2**

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- (c) Describe TWO potential effects of chemical movement into the sensitive areas you have nominated. **2**

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- (d) For one of the sensitive areas you have nominated, identify and analyse ONE control measure that will minimise the risk of the chemical impacting on that area. **2**

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Question 17 (5 marks)

(This question relates to the diagram on page 10.)

- (a) Use a ruler and the diagram scale to calculate the area of the *Horse paddock* on Cudgegong Farm in hectares. (Show working.) **2**

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- (b) The farmer wishes to apply the non-selective herbicide at a rate of 3 L per ha. How much of the non-selective herbicide will be needed? (Show working.) **1**

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- (c) The chemical is to be applied at a dilution rate of 1 : 100. How much water will be required? (Show working.) **1**

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- (d) For a 500-litre spray tank, how many tank mixes would be required? (Show working.) **1**

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Centre Number

Section II (continued)

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Student Number

Marks

Question 18 (8 marks)

A farmer is preparing to spray an oat crop for red-legged earth mite. The farmer has previously checked the equipment and read the product label.

During the spraying operation the farmer notices that some of the nozzles on the boom spray are blocked. This could be caused by a number of things.

- (a) State TWO essential safety steps the farmer should follow before trying to remedy the problem of the blocked nozzles. **2**

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- (b) Identify ONE possible reason why the nozzle may have blocked, and describe a possible remedy for this situation. **2**

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Question 18 continues on page 14

Question 18 (continued)

- (c) Before lunch the farmer returns to the chemical store to mix a new batch of chemicals. While performing this operation some chemicals spill onto the farmer's clothing. **1**

What should be done to prevent this happening again?

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- (d) The farmer's employee becomes alarmed when the farmer does not come in for lunch. The employee walks over to the chemical store and finds that the farmer has collapsed in the chemical store. **3**

Describe and justify an emergency action plan that the employee could follow in this situation.

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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

Marks

Question 19 (5 marks)

A farmhand is returning from town in the farm utility. The utility swerves to miss a kangaroo. A twenty-litre agricultural chemical drum falls off the utility and splits, spilling chemical on the road.

- (a) Name ONE authority that the farmhand should notify. **1**

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- (b) List TWO pieces of information about the chemical the farmhand should communicate to the authority, and explain the importance of each one.

- (i) **2**

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- (ii) **2**

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Question 20 (4 marks)

List TWO documents that you should complete prior to commencing employment in the primary industry sector, and state the purpose of each one.

Document 1:

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Document 2:

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Centre Number

Section II (continued)

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Student Number

Marks

Question 21 (5 marks)

You have carried out a risk assessment for your farm. One of the hazards you have identified is a low overhead power line near a grain silo.

- (a) Identify the risk created by this hazard. **1**

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- (b) Identify a control measure for this hazard. **1**

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- (c) Justify the use of this control measure. **3**

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Primary Industries

Section III

30 marks

Attempt TWO questions from Questions 22–24

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 22 (15 marks)

Different methods of communication are appropriate in different situations.

Consider these two situations:

Situation A: You would like to organise and promote a rodeo in your local area to raise money for charity.

Situation B: A fire is reported to be burning three kilometres from your workplace and the wind is directing it towards you.

Identify the most appropriate methods of communication and the information you would include for each situation.

Justify your choice of methods and the information included.

Question 23 (15 marks)

The use of farm chemicals forms an integral part of the management of pests in many farm enterprises.

Identify potentially hazardous situations that may occur in each of the following: chemical storage, preparation, use and clean-up of farm chemicals. Evaluate procedures that could be used to minimise the potential risks associated with TWO of these hazardous situations.

Please turn over

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
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Question 24 (15 marks)

Integrated pest management (IPM) is a strategy of using a number of coordinated methods to control pests and diseases, rather than relying only on chemical control methods. Primary industry producers are aware that IPM is a more effective method of controlling pests and diseases.

Choose an IPM program that you are familiar with, describe and analyse its components, and contrast this IPM program with a totally chemical control program.

End of paper