BOARD OF STUDIES
NEW SOUTH WALES

2010

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 2–8

15 marks

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

Section II Pages 9–16

35 marks

- Attempt Questions 16–19
- Allow about 50 minutes for this section

Section III Page 17

15 marks

- Attempt Question 20
- Allow about 25 minutes for this section

Section IV Page 18

15 marks

- Attempt Question 21
- 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.

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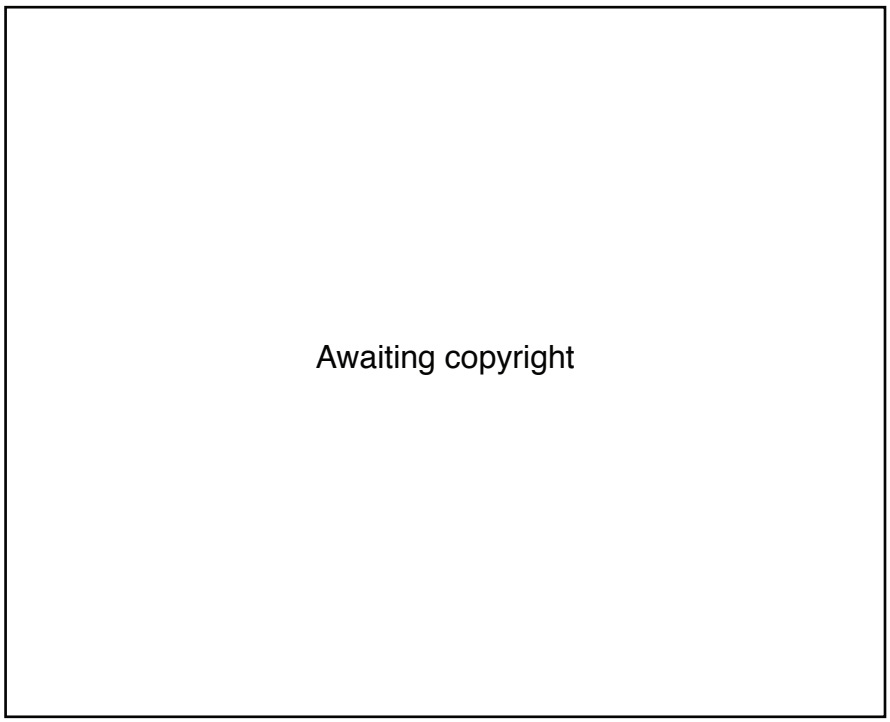
1 This weather map shows a number of symbols.



On the weather map the letter ***X*** points to a symbol that represents a

(A) cold front.

(B) warm front.

(C) low pressure trough.

(D) high pressure system.

2 How would you dispose of used chemical containers to have the least impact on the environment?

(A) Rinse the containers and stack them in a shed.

(B) Double rinse the containers and burn them at a secure site.

(C) Triple rinse the containers and bury them in a secure paddock.

(D) Pressure rinse the containers and take them to a drum muster site.

3 You wake up unwell on a workday morning.

What is the most appropriate way of notifying your employer that you are unable to come to work on that day?

(A) Arrive late and explain why you were delayed.

(B) Immediately ring your employer and request sick leave.

(C) Email your employer and say that you will not be at work that day.

(D) Send an SMS message to a work colleague and ask them to let your employer know.

4 Which statement best describes the occupational health and safety responsibilities of employees, according to the *Occupational Health and Safety Act 2000* (NSW)?

(A) To take reasonable care for the health and safety of others and cooperate with workplace safety initiatives

(B) To wear and use safety equipment supplied to them and to consult with other workers to develop safe systems of work

(C) To consult with other workers so they can contribute to OHS decisions and cooperate with an employer to work safely

(D) To provide information, instruction and training for other workers and tell the supervisor about hazards or other safety matters

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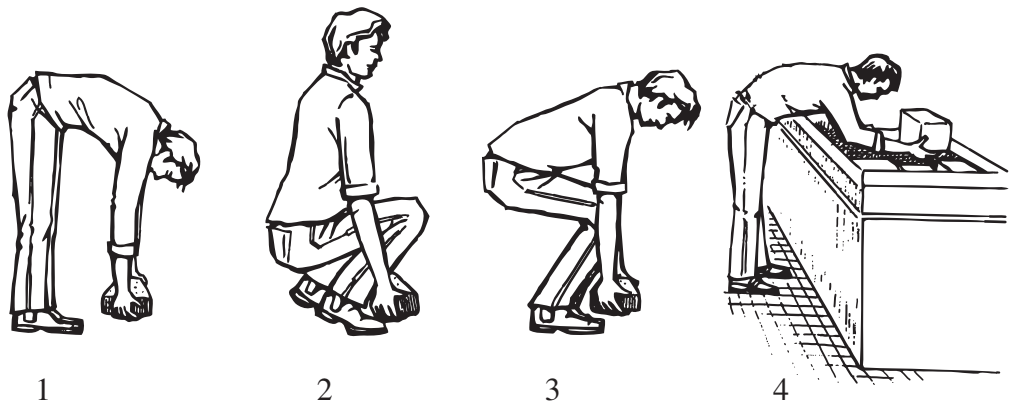


1 2 3 4

Which of the four diagrams illustrates the preferred OHS procedure for lifting objects?

(A) 1

(B) 2

(C) 3

(D) 4

6 Which organisation is responsible for implementing the *Protection of the Environment Operations Act 1997* (NSW)?

(A) Greening Australia

(B) Australian Conservation Foundation

(C) Department of Environment and Heritage

(D) Department of Environment, Climate Change and Water (previously EPA)

7 This list shows steps in the treatment of a person who is having an epileptic fit. They are not in correct order.

1. Observe the person.
2. Assess the risk of danger.
3. Clear the area around the person.
4. Place the person in the recovery position and cover.

Which order of steps is correct?

(A) 1, 4, 2, 3

(B) 2, 3, 4, 1

(C) 3, 2, 1, 4

(D) 4, 1, 2, 3

8 This table shows weekly tax rates for employees.

Gross Pay per week	Less than $500	$500–$800	$801– $1200
Tax rate	Nil	15 cents in the dollar	30 cents in the dollar

An employee received $900 for one week's work.

What amount of tax did this employee have to pay?

(A) $60

(B) $75

(C) $135

(D) $270

9 A person who is suffering from shock is sweating excessively and looking pale.

What is the correct treatment to apply?

(A) Sit the person down and give them a drink.

(B) Lay the person down in the recovery position.

(C) Lay the person down on their back and apply CPR.

(D) Lay the person down on their back with their legs raised.

10 When is the most favourable time to apply a chemical for control of weeds?

(A) Just before rainfall

(B) When the weed is dormant

(C) After a prolonged hot, dry period

(D) When the weed is actively growing

11 During fencing, a gripple is most commonly used to

(A) keep farm gates secure.

(B) join strands of wire together.

(C) attach a strand of wire to the earth.

(D) attach a strand of wire to a wooden fence.

12 CC3 weeds are defined as 'potentially noxious threats to primary production or the environment and are not present in the State or are present only to a limited extent.'

According to the *Noxious Weed Act 1993* (NSW), these weeds must be

(A) eradicated from the land.

(B) fully and continuously suppressed.

(C) controlled to reduce their ability to spread.

(D) monitored to ensure that they do not spread to other areas of the State.

13 The table shows the roll length and cost for two types of fencing wire.

Type of wire	*Length per roll*	*Cost per roll*
Hi-tensile barbed wire	400 metres	$80
Hi-tensile plain wire	1500 metres	$120

A 248 metre fence is to be constructed with seven strands of wire. The fence must have three strands of barbed wire and four strands of plain wire. An additional two metres per strand should be allowed for affixing wire to end posts.

How much will the exact amount of wire cost to build the fence?

(A) $280

(B) $240

(C) $230

(D) $200

14 An employee is asked to prepare and pack 10 cases of potted plants. Each case contains 10 pots. The table shows the times required for each of the steps in preparing and packing one pot.

Step in preparing and packing	*Time taken for one pot* (in seconds)
Filling pot with potting mix	20
Transplanting seedlings	50
Watering pot	20
Labelling pot	20
Packing pot into case	10

How long will it take the employee to prepare and pack 10 cases of plants?

(A) 20 minutes

(B) 2 hours, 20 minutes

(C) 3 hours, 20 minutes

(D) 3 hours, 40 minutes

15 The table shows data for four herbicides registered for the control of blackberries in NSW.

Herbicide	*LC50 Trout* (mg/L)	*LD50 Rat* (mg/kg)	*Persistence* (months)	*Mode of action*
1	320	1310	4	• Selective for broadleaf • Leaf contact • Inactive in soil
2	550	1500	15	• Broad spectrum • Absorbed through the roots • Active in soil
3	990	5000	0	• Broad spectrum • Absorbed though the leaves • Inactive in soil
4	1	730	2	• Selective for broadleaf • Absorbed through the leaves • Inactive in soil

Which herbicide is best to use on blackberries growing along a grass-stabilised creek bank?

(A) 1

(B) 2

(C) 3

(D) 4

2010 HIGHER SCHOOL CERTIFICATE EXAMINATION

Primary Industries

Centre Number

Section II

Student Number

35 marks
Attempt Questions 16–19
Allow about 50 minutes for this section

Answer the questions in the spaces pro vided. These spaces pro vide guidance for the e xpected length of response.

Question 16 (8 marks)

Use the following data to answer Question 16.

A farmer is planning to spray a crop. The f armer undertakes an initial calibration of the 5 metre boom spray and measures the flow rate from each of the 10 T jet nozzles. The manufacturer's specifications for this T jet are 600 mL per minute ±10%.

Measurement of flow rates for each nozzle on the boom spray

Nozzle number	1	2	3	4	5	6	7	8	9	10
mL per minute	600	680	590	610	600	600	520	580	620	570

(a) Identify TWO nozzles that do NOT meet the manufacturer's output specifications and give ONE possible reason for each nozzle not meeting these specif ications. **4**

Nozzle Number	*Reason for NOT meeting specification*
Nozzle	.....
Nozzle	.....

Question 16 continues on page 10

(b) After replacement and repair of the nozzles the average flow rate of the 10 nozzles is 600 mL per minute per nozzle. **4**

The farmer is going to spray a 2 hectare paddock using the 5 metre boom spray attached to a tractor travelling at 10 kilometres per hour.

Use the following formula to calculate the volume of water required. Show all working.

$$\text{Volume of water required} = \frac{\text{Total output (litres/minute)} \times 600 \times \text{Area of paddock (ha)}}{\text{Effective spray width (m)} \times \text{Actual ground speed (km/h)}}$$

$$\text{Volume of water required} = \frac{\times\ 600\ \times}{\times}$$

Volume of water required = ...

End of Question 16

Primary Industries

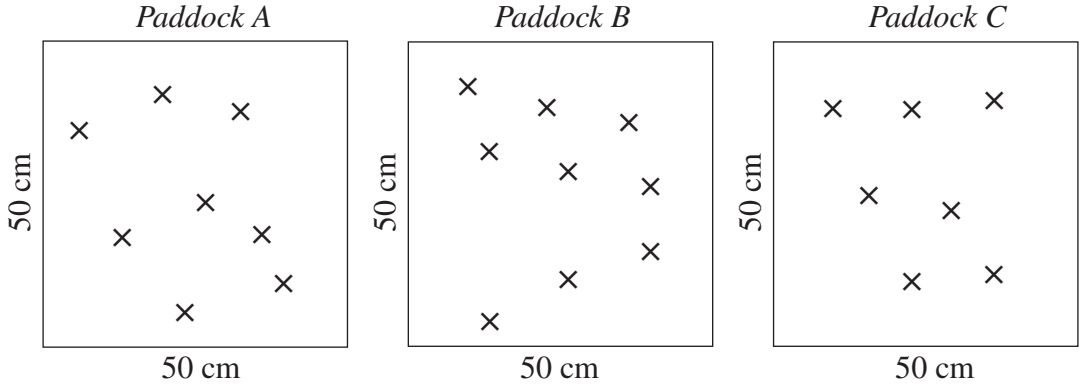
Centre Number

Section II (continued)

Student Number

Question 17 (9 marks)

As part of an integrated weed control program the density of weeds is measured using a 50 cm quadrat. Each diagram belo w represents a quadrat from three separate paddocks. In each quadrat the symbol × shows an individual weed plant.



(a) Calculate the weed density in each paddock in plants per square metre. **1**

Paddock	*Weeds / Square Metre*
A	
B	
C	

(b) The threshold for initiating chemical treatment of the weeds is 30 or more plants per square metre. **1**

Which paddock or paddocks will require treatment?

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Question 17 continues on page 12

(c) List FOUR factors that would need to be taken into account before the chemical is applied. **2**

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(d) Discuss the effectiveness of THREE methods of weed control that could be used in an integrated weed management program. **5**

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End of Question 17

Question 18 (9 marks)

(a) You enter a workshop and see a person lying on the floor. A power tool and a ladder are lying near the person and a damaged light fitting is hanging from the ceiling. The person appears to have burns to both hands. **6**

Justify the process you would use to assess this emergency situation and apply first aid.

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Question 18 continues on page 14

(b) Outline THREE control measures that could be implemented to reduce the risk of a similar accident occurring in the future. **3**

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End of Question 18

Question 19 (9 marks)

A fence that has bent steel posts and broken strands of both plain and barbed wire needs to be repaired.

(a) List TWO items of equipment that you would require for each of the following repair tasks. **2**

Repair task	*Items of equipment required*
Join broken wires	.....
Replace steel posts	.....

(b) A risk assessment must be undertaken before commencing this task. **1**

Which piece of New South Wales Government legislation requires you to manage risks in a work environment?

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Question 19 continues on page 16

Question 19 (continued)

(c) Identify the major hazards associated with repairing this fence. **2**

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(d) Develop a work plan for the repair of this fence. Include in the plan what you would do to prepare for the task, to carry out the repairs and to complete the repair of the fence. **4**

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End of Question 19

Primary Industries

Section III

15 marks
Attempt Question 20
Allow about 25 minutes for this section

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

In your answer you will be assessed on ho w well you:

- demonstrate knowledge and understanding relevant to the question
- communicate ideas and information using rele vant workplace examples and industry terminology
- present a logical and cohesi ve response

Question 20 (15 marks)

Choose ONE of the follo wing natural disasters:

- flood
- fire
- storm.

Evaluate a range of strate gies that could be implemented to reduce the safety and environmental impacts of the chosen disaster on a primary industry enterprise.

Please turn over

Section IV

15 marks
Attempt Question 21
Allow about 25 minutes for this section

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

Question 21 (15 marks)

You have been asked to organise and deliver a workplace orientation program for new employees in a primary industry enterprise that you are familiar with.

(a) Name the enterprise and list the key attributes that an employer would look for in new employees in this enterprise. **3**

(b) Explain why these attributes are important to this enterprise. **4**

(c) Evaluate a range of communication strategies which you could use to conduct an effective orientation program. **8**

End of paper