APPENDIX A:

ANSWERS TO SELF-TEST QUESTIONS

ANSWERS TO SELF-TEST QUESTIONS

Chapter 1: General Information

1. Organophosphate and carbamate.

2. 2,4-D and MCPA.

3. Botanical pesticides. Pyrethrum is the most common.

4. Piperonyl butoxide enhances the effect of pyrethrum.

5. False. Pyrethrum, the most common of the natural pyrethroid group, is extracted from the flower heads of the chrysanthemum plant. Synthetic pyrethroids are man-made equivalents of natural pyrethrums.

Chapter 2: Human Health

1. False. Repeated exposure to small doses of organophosphate insecticides can be very dangerous.

2. True.

3. True.

4. False. Unlike organophosphate compounds, carbamates are quickly broken down in the body. Their effect on cholinesterase inhibition is brief.

5. Phenoxy herbicides.

6. Symptoms of acute poisoning may include nausea, vomiting, cough, and irritation to the lungs (may progress to bronchial pneumonia with fever and cough).

7. True.

8. This can cause a number of poisoning symptoms. This includes headache, fatigue, or dizziness in mild poisoning. Symptoms of severe poisoning include nausea, trembling, twitching, convulsions, respiratory failure, heart difficulties, and even death.

9. Each person has a different baseline value of cholinesterase. You must have a blood test before handling or using these pesticides. A pre-season blood test can give a person's normal (baseline) value of cholinesterase.

10. False. Herbicides in the phenoxy chemical family are not cholinesterase inhibitors.

Chapter 3: Pesticide Safety

1. Spray below shoulder height to reduce applicator and bystander exposure to drift.

2. Wear gloves and goggles.

3. True.

4. **a**. A respirator may only be required for some pesticides.

Chapter 4: Environment

1. Avoid:

   a. Contamination of fishponds and pools.

   b. Drift or leaching to nearby properties.

   c. Contamination of nesting birds and foraging bees when spraying trees.

2. b. Increasing the spray pressure will reduce droplet size. Small droplets are more likely to drift.

3. To prevent bystander exposure to pesticides:

   a. Post public notices stating where and when treatments are planned, or have occurred.

   b. Keep to all provincial and municipal requirements for public notice (e.g., posting, direct contact with nearby property owners).

   c. Use pesticides during periods of low public activity. Use weekends for school grounds. Use early morning for parks.

   d. Avoid spraying near public roadways.

   e. Tell owners or occupants of private land what to do to prevent exposure.

4. True.

5. a. and b.

Chapters 5 through to Chapter 8: Integrated Pest Management and Pests (Various)

1. Two of the following:

   - Begin with a small site
   - Choose a site with few pests
   - Choose one pest or group of pests

2. Gathered information should include:

   - Past records of pest problems or treatments
   - Regulatory requirements or local bylaws that apply
   - All treatments that can be used

- Money and other resources that can be used for an IPM program
- Initial site assessment information

3. Sticky traps also attract beneficial species.

4. Two main ways, in an IPM program, to use natural enemies of pests are:
   - Conserve and attract native species.
   - Purchase commercial species and release them.

5. They clog breathing systems of insects and mites. They can also disrupt egg membranes and keep them from hatching.

6. They have the least impact on natural enemies of pests.

7. To prevent weed problems:

   - Design hard surface areas to eliminate weed zones
   - Avoid bringing weed seeds into sites
   - Care for desired plants so they can compete with weeds
   - Sow competitive plants or aggressive ground covers

8. You must diagnose and correct conditions that cause disorders. Plants weakened by stress are more likely to be attacked by pathogens or insects. They may also be less able to compete against weed infestations.

9. Dormant spores are least likely to be affected by a fungicide.

10. True.

11. False.

12. False.

Chapter 9: Application Technology

1. Hand held pressure sprayers, backpack sprayers, boom sprayers, power hose sprayers, wick applicators, and tree stem injectors.

2. Sprayer parts include:

   - Spray tank
   - Pumps
   - Agitators
   - Strainers
   - Controls
   - Pressure gauge
   - Plumbing
   - Structural framework (including boom design)
   - Nozzles
   - Clean water tank (for decontamination)

3. b.

4.

   - Set-up the sprayer.
   - Measure the equipment application rate.
   - Make adjustments. Correct equipment application rate and volume if needed.
   - Figure out the amount of pesticide to add to the spray tank (Pesticide Use Calculations).

5. Three factors are:

   - Spray width (or nozzle spacing)
   - Total nozzle output (or average nozzle output)
   - Travel speed

6. Weather factors:

   - Air and ground temperature

- Relative humidity
- Wind speed and direction
- Forecast weather conditions

7.

- Increase droplet size by lowering pressure
- Select a low drift nozzle
- Use a coarse spray quality (droplet size)
- Lower boom height or hold the spray gun closer to the target. Nozzles can be tilted forward to maintain recommended boom height for proper overlap and uniform application. Note: Lowering the boom by using nozzles with wider spray patterns, and finer droplets, may not reduce drift
- Use a spray guard or shroud
- Use equipment to reduce or stop drift (e.g., wick application equipment)
- Use drift control agents

8.

- Rinse the equipment at the end of each spraying day. Flush clean water through the pump, hoses, and nozzles
- Check all screens, strainers, and nozzles. Clean them if needed
- Check the sprayer for wear. Replace worn or damaged parts
- Wash the sprayer. Dispose of rinsate where residues will not cause environmental harm
- Follow label directions and provincial laws

Check the:

- Agitator
- Regulator
- Pressure gauge (for accurate operation)
- Couplings and clamps (for proper seal)
- Hose flex points (for wear)

9. Main parts:

- Storage hoppers
- A metering mechanism
- A distribution system

10. Treatment width equals the total of all individual band widths for one pass.

11. Mix them into the soil.

12. Steps include:

    - Cleaning the equipment
    - Lubricating all moving parts
    - Following the manufacturer's guidelines
    - Checking and replacing worn parts
    - Storing equipment where it will not be damaged by other equipment, livestock, or weather

Chapter 10: Professionalism

1. True.

2. Ways include:

    - Avoiding pesticide applications in schoolyards when children are present
    - Applying pesticides in residential areas with little human presence
    - Applying pesticides to commercial and public property during off-hours or times of reduced traffic