**S90 Checklist Unit 3 Environmental Chemistry Unit Test**

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|  | I have taken the Science Focus online tests for this unit. |
| 1. | 1a. What are **CFC’S**?  1b. What were they used for?  1c. Why are they harmful to us?  1d. Describe the catalytic reaction they do which breaks down O3 (ozone). |
| 2. | 2a. What was **DDT** used for?  2b. How is it harmful to birds of prey, like the peregrine falcon?  2c. How is it harmful to humans?  2d. How is it beneficial to humans? |
| 3. | Is DDT a **persistent** or **nonpersistent** pollutant? |
| 4. | 230 ppb represents the amount of a substance in an organism’s t\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |
| 5. | 230 ppm represents 230 \_\_\_ / \_\_\_\_\_\_. |
| 6. | A 450 ml sample of water contains 5.5 mg of fluoride. What is the concentration of fluoride in ppm? **Remember 1 ml H20 = 1 g.** |
| 7. | A 130 g hamburger has 800 mg of salt. Calculate the concentration of salt in the burger in ppm. |
| 8. | What ion makes solutions acidic? |
| 9. | What ion makes solutions basic? |
| 10. | I can draw the **pH scale** and label strong acid, weak acid, neutral, weak base, strong base. |
| 11. | What is an **acid/base indicator**? Give 4 examples. |
| 12. | What color do red and blue litmus paper turn in the presence of an acid? |
| 13. | What color do red and blue litmus paper turn in the presence of an base? |
| 14. | What do bases taste and feel like? |
| 15. | What do acids taste and feel like? |
| 16. | 16a. Which chemicals cause **acid precipitation**?  16b. Where do these chemicals come from?  16c. Describe 3 ways acid precipitation is harmful to the environment.  1.  2.  3. |
| 17. | What is the most practical way to deal with acid rain? |
| 18. | If a **fertilizer** is labeled 20-15-30. which number indicates the % of potassium \_\_\_\_\_\_\_\_, % of nitrogen \_\_\_\_\_\_\_\_ and the % of phosphorus \_\_\_\_\_\_\_\_. |
| 19. | What pollutants go into our water from **detergents and fertilizers**? |
| 20. | 20a.. Why do pollutants from fertilizers and detergents cause **algal blooms** in rivers, lakes and oceans?  20b. How do algal blooms decrease oxygen levels in water and can cause creeping dead zones. |
| 21. | What do we call a substance that is used to dissolve another substance? |
| 22. | Why are we concerned with **solvents** that we use at home like paint thinner and turpentine? |
| 23. | We use plants to help us decrease pollution. We call this **BIOREMEDIATION.**  Plants \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pollutants. |
| 24. | What are the 3 types of **pesticides** and what do they kill?  1.  2.  3. |
| 25. | What kind of pesticides do **organic farmers** can use? |
| 26. | 1. What is the name of the chemical reaction that neutralizes acids or bases?  2. A **neutralization reaction** is  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  3. The products of a neutralization reaction are always a \_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_)  4. The neutralization reaction called **liming** to prevent acid rain is  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_  (base) ( acid ) |
| 27. | What is a scrubber used for? |
| 28. | How is calcium oxide (CaO) used as a **sorbent** in scrubbers? |
| 29. | The **three variables** used in the germinating seed experiment are:  1. manipulated:  2. responding:  3. controls: |
| 30. | Describe what **LD50** means. |
| 31. | Which is more toxic: a substance with an LD50 of .000004 ppm and a substance with an LD50 of 4.0 ppm? |
| 32. | What is the difference between **acute and chronic toxicity**? |
| 33. | What are 4 conditions that promote **biodegradation of wastes**.  1.  2.  3.  4. |
| 34. | Name 3 reasons why the term **“biodegradable**” can be misleading.  1.  2.  3. |
| 35. | What are the **4 Rs** for reducing household waste? |
| 36. | In rivers, streams and lakes why is there a decrease in oxygen in the **decomposition zone**? |
| 37. | 37a. How does **turbulence** affect the **amount of oxygen in water bodies**?  37b. How does **temperature** affect the **amount of oxygen in water bodies**? |
| 38. | Which **biological indicators** can ONLY be found in good quality water? |
| 39. | Which biological indicators that can be found in all qualities of water (good, moderate and poor)? |
| 40. | What is the largest contributor to air pollution in Canada? |
| 41. | 1. \_\_\_\_\_\_\_\_\_\_\_\_\_ water is the water that filters down through soil and rock.  2. \_\_\_\_\_\_\_\_\_\_\_\_\_ water is the water that is found in rivers, lakes, streams and   oceans. |
| 42. | 42a. What is an **aquifer**?  42b. Is an aquifer ground or surface water? |
| 43. | 43a. How do pollutants get into aquifers?  43b. Why is this so dangerous? |
| 44. | What are the following tanks used for in the **sewage treatment process?**:  1. sedimentation tanks:  2. settling tanks:  3. aeration tanks:  4. disinfection tanks: |
| 45. | What is the difference between a **secure landfill** and a **sanitary landfill?** |
| 46. | What is the difference between point source and non-point source pollution? Give an example of each.  1.  2. |
| 47. | How does a catalytic converter make vehicle exhaust cleaner? |
| 48. | Why do catalytic converters last for a long time? |
| 49. | Caffeine has an LD50 of 130ppm for mice. Why is caffeine **not** considered dangerous for humans? |
| 50. | What are the 4 main nutrients we need and what do they provide for us?  1.  2.  3.  4. |
| 51. | How do root hairs help plants extract minerals (including pollutants) from the soil? |