

**Radiation Safety Quiz**

Name: \_\_\_\_\_

Answer each of the following true or false.

Date: \_\_\_\_\_

- \_\_\_\_\_ 1. The greatest source of radiation exposure to the general public is from the waste from nuclear energy plants.
- \_\_\_\_\_ 2. Radiation comes from each isotope of an element.
- \_\_\_\_\_ 3. We have demonstrated proof that working with radiation within the occupational worker's maximum exposure level results in increased incidence of deaths due to cancer.
- \_\_\_\_\_ 4. Half life is the time it takes for half of the substance to undergo radioactive decay.
- \_\_\_\_\_ 5. The SI unit of absorbed dose is the Gray (Gy)
- \_\_\_\_\_ 6. Alpha radiation is more penetrable than beta or gamma radiation.
- \_\_\_\_\_ 7. Phosphorus-32 is a high energy beta emitter and therefore can be monitored by use of a Geiger-Muehler survey monitor.
- \_\_\_\_\_ 8. Tritium (H-3) can be monitored by use of a Geiger-Muehler survey monitor.
- \_\_\_\_\_ 9. To monitor the work area for possible contamination with carbon-14 or tritium, wipe test analyses must be performed and the samples analyzed by use of a liquid scintillation counter.
- \_\_\_\_\_ 10. Areas in which radionuclides are used and stored must have restricted access.
- \_\_\_\_\_ 11. Monitoring of the work area must be performed once a day while performing work utilizing radionuclides, plus a whole lab monitoring once each week while conducting work utilizing radionuclides.
- \_\_\_\_\_ 12. All licensed, approved users of radionuclides can order and receive radionuclides directly without consulting the radiation safety officer.
- \_\_\_\_\_ 13. Goggles, gloves and lab coats must be worn while working with radioactive materials.
- \_\_\_\_\_ 14. Rate is the amount of radiation you were exposed to.

- \_\_\_\_ 15. Shielding of a low energy beta emitter such as tritium requires the use of a lead brick or apron.
- \_\_\_\_ 16. Phosphorus-32 has a half-life of 14.3 days. Therefore it is considered a long half-life isotope.
- \_\_\_\_ 17. When working with a high energy beta emitter such as phosphorus-32, personal monitors include a film badge and a finger badge dosimeter if only doing one or two experiments a year.
- \_\_\_\_ 18. Time and Shielding are the only real methods of reducing internal exposure to radiation.
- \_\_\_\_ 19. Low level, solid radioactive waste can be disposed of directly in the regular trash.
- \_\_\_\_ 20. Protocols for use of radionuclides in teaching must be submitted and approved by the Radiation Safety Officer and the Radiation Safety Committee.
- \_\_\_\_ 21. The annual Limit for workers (whole body dose) is 220 dpm.
- \_\_\_\_ 22. Symptoms of radiation sickness such as nausea and internal bleeding are examples of chronic effects of long-term exposure to low levels of radiation.
- \_\_\_\_ 23. No radioactive waste materials can be disposed down the sink in the sewer.
- \_\_\_\_ 24. The Radiation License assigned to Minnesota State University is issued by the Minnesota Department of Health.
- \_\_\_\_ 25. All approved radiation safety programs must implement regulations and procedures which maintain exposure to radiation workers ALARA.