

28.4

RADIATION IN YOUR LIFE

SECTION REVIEW

Objectives

- Describe three methods of detecting radiation
- List some applications of radioisotopes in research and medicine

Key Terms

- ionizing radiation
- Geiger counter
- scintillation counter
- film badge

Part A Completion

Use this completion exercise to check your understanding of the concepts and terms that are introduced in this section. Each blank can be completed with a term, short phrase, or number.

The radiation from radioisotopes is known as 1 radiation **1.** _____
 because of its ability to strip 2 from atoms of a bombarded **2.** _____
 substance. It is not possible to detect ionizing radiation with your **3.** _____
 3 . **4.** _____
 A 4 counter uses a 5 -filled tube to detect ionizing **5.** _____
 radiation, specifically 6 radiation. A 7 counter uses a **6.** _____
 phosphor surface to detect 8 types of ionizing radiation. **7.** _____
 Radioisotopes have many practical uses. For example, 9 **8.** _____
 is used to detect thyroid problems, while 10 is used to detect **9.** _____
 skin cancers. **10.** _____

Part B True-False

Classify each of these statements as always true, AT; sometimes true, ST; or never true, NT.

- _____ **11.** The film badge is a personal radiation monitor.
- _____ **12.** A Geiger counter is the best alpha particle detector.
- _____ **13.** A scintillation counter is used to detect gamma radiation.
- _____ **14.** Iodine-131 can detect thyroid problems.

Part C Matching

Match each description in Column B to the correct term in Column A.

Column A	Column B
_____ 15. ionizing radiation	a. radiation detector consisting of several layers of photographic film
_____ 16. Geiger counter	b. radiation with enough energy to knock electrons off some of the atoms it strikes
_____ 17. scintillation counter	c. device that uses a coated surface called a phosphor to detect ionizing radiation
_____ 18. film badge	d. radioisotopes used to study chemical reactions and molecular structures
_____ 19. tracers	e. gas-filled tube used to detect beta radiation

Part D Questions and Problems

Answer the following in the space provided.

20. Which of the following is the best means of detecting the presence of alpha radiation? Circle the letter of the correct answer.
- a. Geiger counter
 - b. film badge
 - c. scintillation counter

21. List applications of radioisotopes in research and medicine.
