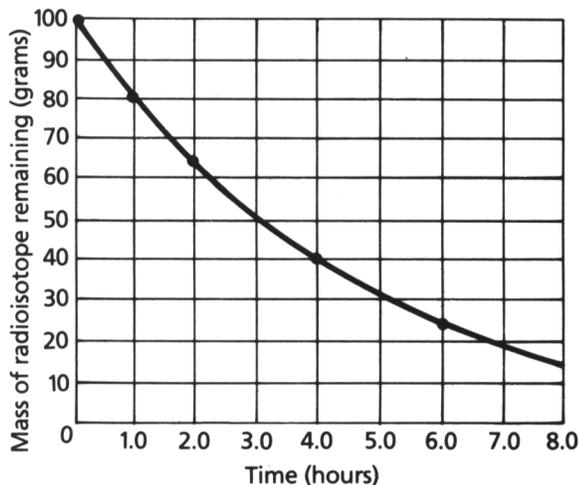




14. The isotope Bi-214 decays from 60.00 g to 7.50 g in 1 hour. What is its half-life?  
 (A) 5 minutes (C) 15 minutes  
 (B) 10 minutes (D) 20 minutes

17. The decay series of Th-232 involves an alpha decay and then two beta decays. What is the result of these decays?  
 (A) Th-228 (C) Fr-224  
 (B) Rn-228 (D) Pb-207

Questions 15 - 16 refer to the following graph:



15. According to the above data, what is the half-life of the substance?  
 (A) 1.0 hrs (C) 3.0 hrs  
 (B) 2.3 hrs (D) 8.0 hrs
16. What percent of the original sample remains after 4 hours?  
 (A) 80% (C) 60%  
 (B) 75% (D) 40%

18. In the nuclear equation,  

$${}_{92}^{238}\text{U} \rightarrow {}_Z^AX + {}_2^4\text{He}$$
 the letters Z and A are, respectively  
 (A) 90 and 242 (C) 94 and 234  
 (B) 94 and 242 (D) 90 and 234
19. Radioactive C-14 has a half-life of about 5,000 years. If a fossil is only about 6% as radioactive as expected for living tissue of the same mass, the age of the fossil is about:  
 (A) 5,000 yrs (C) 20,000 yrs  
 (B) 10,000 yrs (D) 40,000 yrs

### Answers

- |      |       |       |       |
|------|-------|-------|-------|
| 1. C | 6. C  | 11. B | 16. D |
| 2. B | 7. A  | 12. B | 17. A |
| 3. D | 8. A  | 13. D | 18. D |
| 4. A | 9. C  | 14. D | 19. C |
| 5. B | 10. B | 15. C |       |