MANITOBA PHYSICS 40S · UNIT D · 25 QUESTIONS

Medical Physics — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 **A mass of 2 kilograms absorbs 8 joules of radiation energy. The absorbed dose, in gray, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

2 **A radioactive sample has a mass of 128 grams. After 2 half-lives, the mass remaining, in grams, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

3 **A sample has an activity of 80 becquerel. After 1 half-lives, its activity, in becquerel, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **An ultrasound pulse reflects from a surface 9 metres away. At 1500 metres per second, the round trip time, in seconds, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

5 **An ultrasound pulse travels at 1500 metres per second and returns after 6 milliseconds. The distance to the reflecting surface, in metres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

6 **A sample decays from 64 grams to 8 grams. The number of half-lives that have passed is**

ANSWER _____

Understand It with Pulse | Flag a mistake

7 **A tracer sample starts at 96 grams. After 3 half-lives, the mass remaining, in grams, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

8 **After 2 half-lives, the percent of a radioactive sample remaining is**

ANSWER _____

Understand It with Pulse | Flag a mistake

9 **A CT scan combines many X-ray images into**

A cross sectional images

B a single photograph

C a sound recording

D a blood test

Understand It with Pulse | Flag a mistake

10 **A lead apron is worn during X-rays to**

- A keep the patient warm
- B improve the image
- C reduce noise
- D absorb radiation

Understand It with Pulse | Flag a mistake

11 **After two half-lives, the fraction of a sample remaining is**

- A one half
- B three quarters
- C one eighth
- D one quarter

Understand It with Pulse | Flag a mistake

12 **Gamma rays are used in cancer treatment because they can**

A damage cancer cells

B cool tissue

C take photographs

D measure blood pressure

Understand It with Pulse | Flag a mistake

13 **A mass of 2 kilograms absorbs 12 joules of radiation energy. The absorbed dose, in gray, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

14 **A radioactive sample has a mass of 64 grams. After 1 half-lives, the mass remaining, in grams, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

15 **A sample has an activity of 80 becquerel. After 3 half-lives, its activity, in becquerel, is**

ANSWER

Understand It with Pulse | Flag a mistake

16 **An ultrasound pulse reflects from a surface 6 metres away. At 1500 metres per second, the round trip time, in seconds, is**

ANSWER

Understand It with Pulse | Flag a mistake

17 **An ultrasound pulse travels at 1500 metres per second and returns after 10 milliseconds. The distance to the reflecting surface, in metres, is**

ANSWER

Understand It with Pulse | Flag a mistake

18 **A sample decays from 128 grams to 8 grams. The number of half-lives that have passed is**

ANSWER

Understand It with Pulse | Flag a mistake

19 **A tracer sample starts at 64 grams. After 2 half-lives, the mass remaining, in grams, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

20 **After 3 half-lives, the percent of a radioactive sample remaining is**

ANSWER _____

Understand It with Pulse | Flag a mistake

21 **A mass of 3 kilograms absorbs 6 joules of radiation energy. The absorbed dose, in gray, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

22 **A radioactive sample has a mass of 192 grams. After 3 half-lives, the mass remaining, in grams, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

23 **A sample has an activity of 120 becquerel. After 3 half-lives, its activity, in becquerel, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

24 **An ultrasound pulse reflects from a surface 12 metres away. At 1500 metres per second, the round trip time, in seconds, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

25 **An ultrasound pulse travels at 1500 metres per second and returns after 2 milliseconds. The distance to the reflecting surface, in metres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

ANSWER KEY

1. 4
2. 32
3. 40
4. 0.012
5. 4.5
6. 3
7. 12
8. 25
9. A
10. D
11. D
12. A
13. 6
14. 32
15. 10
16. 0.008
17. 7.5
18. 4
19. 16
20. 12
21. 2
22. 24
23. 15
24. 0.016
25. 1.5

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