ENGLAND GCSE COMBINED SCIENCE EDEXCEL FOUNDATION · UNIT 22 · 25 QUESTIONS

# Radioactivity — 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 so it can be fixed.

1 **A thermometer shows a patient's temperature is 39 degrees Celsius. Is this above or below normal body temperature?**

- A impossible to tell
- B above normal
- C exactly normal
- D below normal

Understand It with Pulse | Flag a mistake

2 **Hardcover books are dropped. What happens to their speed as they fall?**

A it increases

B it decreases

C it becomes zero

D it stays the same

Understand It with Pulse | Flag a mistake

3 **A wristwatch is used to time a race. What is speed calculated from?**

A time only, not distance

B mass and time together

C distance and time

D distance only, not time

Understand It with Pulse | Flag a mistake

4 **Glass marbles are used to model atoms. What is a limitation of the model?**

A marbles are the wrong colour for atoms

B marbles are much bigger than atoms

C marbles are too small to see properly

D marbles cannot be counted accurately at all

Understand It with Pulse | Flag a mistake

5 **Silver coins conduct electricity well. Why?**

A they have free electrons

B they are cold

C they are heavy

D they are shiny and reflective

Understand It with Pulse | Flag a mistake

6 **A calculator is switched on. What does the battery transfer energy to?**

- A the case
- B the buttons only
- C the circuits
- D the screen only

Understand It with Pulse | Flag a mistake

7 **What is nuclear fission?**

- A a nucleus gaining a proton
- B two light nuclei joining together
- C a heavy nucleus splits in two
- D an atom losing an electron

Understand It with Pulse | Flag a mistake

8 **Why is a short half-life source chosen for a medical tracer?**

A so it stays in the body for years

B so it can be reused

C it decays quickly

D so it is cheaper to make

Understand It with Pulse | Flag a mistake

9 **A sample has an activity of 3200 counts per minute. After 2 half-lives, what is its activity?**

A 1600

B 400

C 3200

D 800

Understand It with Pulse | Flag a mistake

10 **In beta decay, what happens to the atomic number of the nucleus?**

- A it falls by 1
- B it rises by 4
- C it rises by 1
- D it stays the same

Understand It with Pulse | Flag a mistake

11 **What does background radiation come from?**

- A power stations only, nowhere else
- B rocks, air, space, medicine
- C the Sun only
- D mobile phones only

Understand It with Pulse | Flag a mistake

12 **A sample's activity halves every 10 years. After 20 years, what fraction of the original activity remains?**

- A 1/2
- B 1/8
- C 1/4
- D 1

Understand It with Pulse | Flag a mistake

13 **A radioactive sample has an activity of 400 Bq. What is its activity after 2 half-lives?**

- A 50 Bq
- B 200 Bq
- C 100 Bq
- D 400 Bq

Understand It with Pulse | Flag a mistake

**14** An atom has a mass number of 16 and an atomic number of 8. How many neutrons does it have?

- A 8
- B 7
- C 9
- D 10

Understand It with Pulse | Flag a mistake

**15** A sample starts with 8000 counts per minute. After one half-life, what is the count rate?

- A 2000
- B 16000
- C 4000
- D 8000

Understand It with Pulse | Flag a mistake

16 **A sample has a half-life of 5 days. What percentage of the sample is left after 15 days?**

- A 12%
- B 24%
- C 6%
- D 88%

Understand It with Pulse | Flag a mistake

17 **Where does nuclear fusion happen naturally?**

- A in a light bulb
- B in the Sun and stars
- C in a battery
- D in a car engine, like petrol

Understand It with Pulse | Flag a mistake

**18** **Why is nuclear fission used to generate electricity?**

- **A** lots of energy from little fuel
- **B** it works without any fuel at all, for ever
- **C** it needs no shielding
- **D** it produces no waste at all

Understand It with Pulse | Flag a mistake

**19** **Why are gamma rays used to sterilise medical equipment?**

- **A** they heat the equipment up
- **B** they make the equipment stronger
- **C** they make the equipment radioactive
- **D** they kill bacteria

Understand It with Pulse | Flag a mistake

20 **Where does fusion happen naturally?**

A in a power station

B in the Moon

C in the Earth

D in the Sun

Understand It with Pulse | Flag a mistake

21 **In alpha decay, what happens to the atomic number of the nucleus?**

A it stays the same

B it falls by 4

C it falls by 2

D it rises by 2

Understand It with Pulse | Flag a mistake

22 **Which radiation is used in smoke alarms?**

A alpha

B neutron

C gamma

D beta

Understand It with Pulse | Flag a mistake

23 **A radioactive sample has an activity of 800 Bq. What is its activity after 2 half-lives?**

A 100 Bq

B 400 Bq

C 800 Bq

D 200 Bq

Understand It with Pulse | Flag a mistake

**24** **An atom has a mass number of 12 and an atomic number of 6. How many neutrons does it have?**

- A 6
- B 5
- C 8
- D 7

Understand It with Pulse | Flag a mistake

**25** **A sample has a half-life of 5 days. What percentage of the sample is left after 10 days?**

- A 12%
- B 25%
- C 75%
- D 50%

Understand It with Pulse | Flag a mistake

# ANSWER KEY

1. B
2. A
3. C
4. B
5. A
6. C
7. C
8. C
9. D
10. C
11. B
12. C
13. C
14. A
15. C
16. A
17. B
18. A
19. D
20. D
21. C
22. A
23. D
24. A
25. B

© 2026 Brett Robbins. All Rights Reserved.