ENGLAND GCSE PHYSICS OCR GATEWAY HIGHER · UNIT 6 · 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 to let Brett know so he can fix it.

1 **A thermometer is placed in hot water. What happens to the liquid inside the thermometer?**

- A it expands
- B it freezes
- C it contracts
- D it evaporates

Understand It with Pulse | Flag a mistake

2 **Hardcover books have mass. What is mass measured in?**

- A kilograms
- B newtons, the unit of force
- C joules
- D watts

Understand It with Pulse | Flag a mistake

3 **A guitar string is tightened. What happens to the pitch?**

- A it disappears
- B it stays the same
- C it rises
- D it falls

Understand It with Pulse | Flag a mistake

4 **A wristwatch ticks every second. How many ticks in a minute?**

- A 60
- B 100
- C 30
- D 12

Understand It with Pulse | Flag a mistake

5 **Silver coins are made of a metal. Which property do metals have?**

A they do not conduct electricity at all

B they are brittle

C they dissolve in water

D they conduct electricity

Understand It with Pulse | Flag a mistake

6 **A passenger aeroplane flies at a steady speed and height. What is the resultant force on the aeroplane?**

A 1000 N

B 0 N

C 10000 N

D 5000 N

Understand It with Pulse | Flag a mistake

7 **What does fusion in the Sun make from hydrogen?**

A helium

B uranium

C carbon dioxide

D oxygen

Understand It with Pulse | Flag a mistake

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

A they make the equipment stronger

B they kill bacteria

C they make the equipment radioactive

D they heat the equipment up

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

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

Understand It with Pulse | Flag a mistake

10 **Which type of radiation has the longest range in air?**

- A alpha
- B gamma
- C beta
- D neutron

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

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

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12 **A sample has an activity of 1600 counts per minute. After 3 half-lives, what is its activity?**

- A 100
- B 200
- C 800
- D 400

Understand It with Pulse | Flag a mistake

13 **A sample has a half-life of 5 days. After 15 days, what fraction remains?**

- A 1/2
- B 1/4
- C 1/8
- D 1/16

Understand It with Pulse | Flag a mistake

14 **A sample's activity halves every 100 years. After 200 years, what fraction of the original activity remains?**

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

Understand It with Pulse | Flag a mistake

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

A it rises by 2

B it falls by 2

C it stays the same

D it falls by 4

Understand It with Pulse | Flag a mistake

16 **A kite is held by a string. What force does the string exert?**

A gravity

B tension

C friction

D air resistance

Understand It with Pulse | Flag a mistake

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

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

Understand It with Pulse | Flag a mistake

18 **What does the moderator do in a nuclear reactor?**

- A it speeds neutrons up
- B it absorbs all the neutrons
- C it slows neutrons down
- D it makes the fuel

Understand It with Pulse | Flag a mistake

19 **An atom has a mass number of 23 and an atomic number of 11. How many neutrons does it have?**

- A 14
- B 13
- C 12
- D 11

Understand It with Pulse | Flag a mistake

20 **Why is contamination by a radioactive source more dangerous than irradiation?**

- A irradiation is always fatal
- B the source stops working at once, so it is safe
- C contamination cannot be measured
- D it keeps irradiating from inside

Understand It with Pulse | Flag a mistake

21 **A Ferris wheel turns slowly. A person on the wheel moves in a circle. What is the person's speed like?**

A increasing speed

B decreasing speed

C zero speed

D steady speed

Understand It with Pulse | Flag a mistake

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

A marbles cannot be counted accurately at all

B marbles are too small to see properly

C marbles are the wrong colour for atoms

D marbles are much bigger than atoms

Understand It with Pulse | Flag a mistake

23 **What is nuclear fusion?**

- A adding electrons
- B removing electrons
- C splitting a large nucleus
- D joining small nuclei

Understand It with Pulse | Flag a mistake

24 **Why is alpha used in smoke alarms?**

- A it has a long half-life
- B it is not ionising
- C it is stopped by smoke
- D it is very penetrating

Understand It with Pulse | Flag a mistake

25

A set square is used to measure an angle of reflection. What is the angle of incidence equal to?

A double the angle of reflection

B the angle of reflection

C half the angle of reflection

D zero

Understand It with Pulse

Flag a mistake

ANSWER KEY

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

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