ENGLAND GCSE COMBINED SCIENCE AQA SYNERGY FOUNDATION · UNIT 4 · 25 QUESTIONS

Explaining Change — 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 sunflower makes glucose in its leaves. Which gas does it take in for photosynthesis?**

A nitrogen gas from the air

B oxygen gas from the air

C hydrogen gas from the air

D carbon dioxide

Understand It with Pulse | Flag a mistake

2 **A forest absorbs carbon dioxide from the air. Which process is responsible?**

- A decomposition in the soil
- B combustion
- C respiration
- D photosynthesis

Understand It with Pulse | Flag a mistake

3 **Horses are bred for speed. What is this called?**

- A mutation of the genes
- B selective breeding
- C evolution over millions of years
- D natural selection in the wild

Understand It with Pulse | Flag a mistake

4 **A castle is built of limestone. What is limestone made of?**

A calcium sulfate, found in plaster

B calcium carbonate

C magnesium oxide, a white powder

D sodium chloride, common salt

Understand It with Pulse | Flag a mistake

5 **Rabbits breed quickly. What does this mean for the population?**

A it can grow fast

B it always falls

C it never changes

D it always stays small

Understand It with Pulse | Flag a mistake

6 **A cup of coffee cools down. Energy is transferred to the surroundings. What type of change is this?**

- A a reversible reaction
- B a neutralisation
- C an energy transfer
- D a chemical change

Understand It with Pulse | Flag a mistake

7 **A couple have three children, all girls. What is the chance their next child is a girl?**

- A 3/4
- B 1/4
- C 1/8
- D 1/2

Understand It with Pulse | Flag a mistake

8 **In an experiment, 60 cubic centimetres of gas are made in 20 seconds. What is the rate of the reaction?**

A 3 cm^3/s

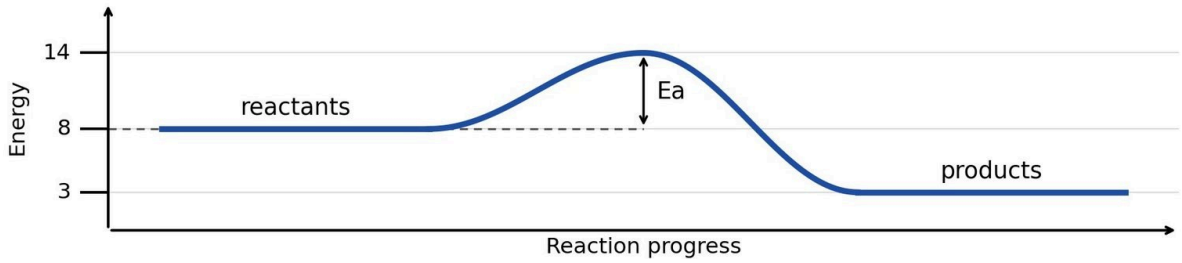
B 1200 cm^3/s

C 6 cm^3/s

D 1.5 cm^3/s

Understand It with Pulse | Flag a mistake

9 **The diagram shows the energy profile for a reaction. The reactants are at energy 8, the peak is at 14 and the products are at 3. What is the activation energy?**



A 11

B 22

C 6

D 5

Understand It with Pulse | Flag a mistake

10 **What is evolution?**

A breeding by humans

B change in organisms over time

C the extinction of species

D the creation of new species only

Understand It with Pulse | Flag a mistake

11 **What is one effect of climate change?**

A sea levels rising

B less rain everywhere

C colder winters everywhere

D the air getting cleaner

Understand It with Pulse | Flag a mistake

12 **A mother has blood group O and a father has blood group AB. Which blood group can their children NOT have?**

- A A
- B O
- C AB
- D B

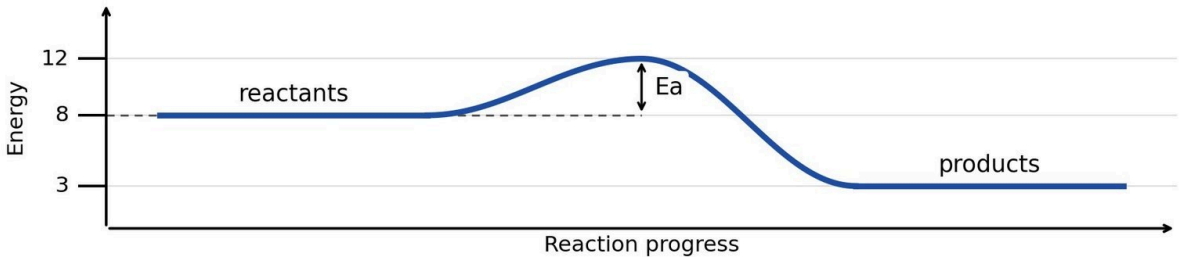
Understand It with Pulse | Flag a mistake

13 **In an experiment, 20 cubic centimetres of gas are made in 20 seconds. What is the rate of the reaction?**

- A 1 cm^3/s
- B 2 cm^3/s
- C 0.5 cm^3/s
- D 400 cm^3/s

Understand It with Pulse | Flag a mistake

14 **The diagram shows the energy profile for a reaction. The reactants are at energy 8, the peak is at 12 and the products are at 3. What is the activation energy?**



A 9

B 20

C 5

D 4

Understand It with Pulse

Flag a mistake

15 **Which bacterium is resistant to many antibiotics?**

- A E. coli
- B MRSA
- C TB bacteria
- D Salmonella

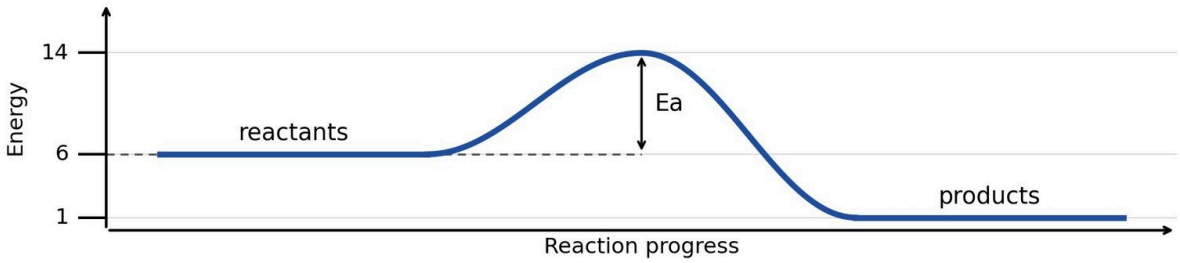
Understand It with Pulse | Flag a mistake

16 **In an experiment, 40 cubic centimetres of gas are made in 20 seconds. What is the rate of the reaction?**

- A 2 cm^3/s
- B 800 cm^3/s
- C 4 cm^3/s
- D 1 cm^3/s

Understand It with Pulse | Flag a mistake

17 **The diagram shows the energy profile for a reaction. The reactants are at energy 6, the peak is at 14 and the products are at 1. What is the activation energy?**



A 13

B 20

C 8

D 5

Understand It with Pulse

Flag a mistake

18 **What happens to the temperature during an exothermic reaction?**

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

Understand It with Pulse | Flag a mistake

19 **What does dominant mean in genetics?**

- A the allele shows even with one copy
- B the allele is on the X chromosome
- C the allele shows only with two copies
- D the allele never shows

Understand It with Pulse | Flag a mistake

20

What is a reversible reaction?

A a reaction that needs a catalyst

B a reaction that makes two products

C a reaction that never finishes

D a reaction that can go both ways

Understand It with Pulse | Flag a mistake

21

Which factor increases the rate of a reaction?

A a lower concentration

B a higher temperature

C a lower temperature

D larger pieces

Understand It with Pulse | Flag a mistake

22 **A pea plant with genotype Bb is crossed with a plant with genotype bb. What fraction of the offspring will be bb?**

- A 1
- B 1/4
- C 3/4
- D 1/2

Understand It with Pulse | Flag a mistake

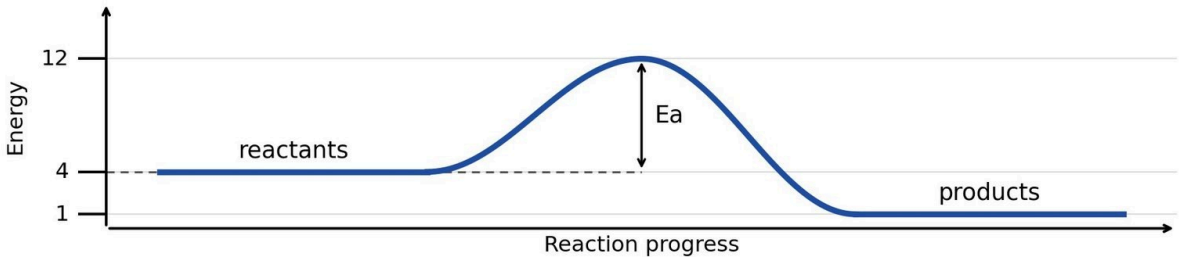
23 **In an experiment, 20 cubic centimetres of gas are made in 30 seconds. What is the rate of the reaction?**

- A 0.6667 cm^3/s
- B 1.3333 cm^3/s
- C 600 cm^3/s
- D 0.3333 cm^3/s

Understand It with Pulse | Flag a mistake

24

The diagram shows the energy profile for a reaction. The reactants are at energy 4, the peak is at 12 and the products are at 1. What is the activation energy?



A 11

B 16

C 3

D 8

Understand It with Pulse

Flag a mistake

25 **Which chromosomes determine that a baby is male?**

A two Y chromosomes

B two X chromosomes

C an X and a Y

D one X only

Understand It with Pulse | Flag a mistake

ANSWER KEY

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

© 2026 Brett Robbins. All Rights Reserved.