ENGLAND GCSE COMBINED SCIENCE AQA SYNERGY HIGHER · 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 cup of coffee cools down. Energy is transferred to the surroundings. What type of change is this?**

- A a neutralisation
- B a reversible reaction that can go both ways
- C an energy transfer, not a chemical change
- D a chemical change

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

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3 **Horses eat grass. What trophic level are horses?**

- A producers
- B primary consumers
- C decomposers
- D secondary consumers

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4 **A sunflower is left in bright light. Its leaves photosynthesise faster than in dim light. What else would increase the rate?**

- A more carbon dioxide in the air
- B a lower temperature
- C less chlorophyll in the leaves of the plant
- D less water in the soil

Understand It with Pulse | Flag a mistake

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

- A calcium carbonate
- B sodium chloride, common salt
- C calcium sulfate, found in plaster
- D magnesium oxide, a white powder

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

- A it always stays small
- B it never changes
- C it can grow fast
- D it always falls

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7

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

A A

B AB

C O

D B

Understand It with Pulse

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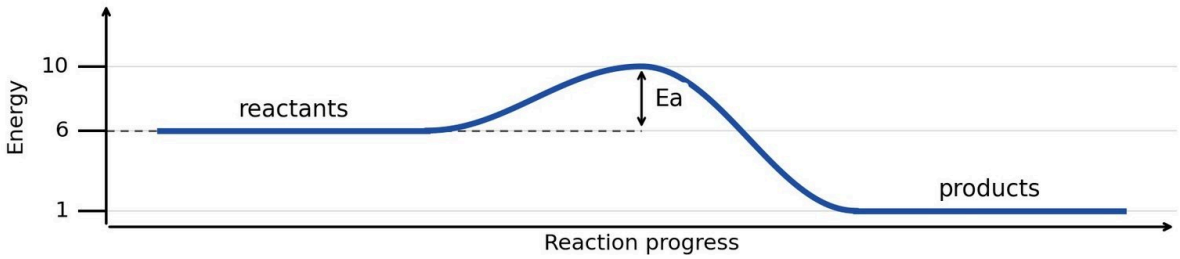
8 **The diagram shows the energy profile for a reaction. The reactants are at energy 6, the peak is at 10 and the products are at 1. What is the activation energy?**



A 9

B 16

C 4

D 5

Understand It with Pulse | Flag a mistake

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

A E. coli

B TB bacteria

C Salmonella

D MRSA

Understand It with Pulse | Flag a mistake

10 **What is a mutation?**

A a change in the DNA

B a new species

C a change in the environment

D a disease

Understand It with Pulse | Flag a mistake

11 **In a reaction, the energy needed to break bonds is 1000 kJ and the energy released making bonds is 1400 kJ. What is the overall energy change?**

- A -1000 kJ
- B -400 kJ
- C 400 kJ
- D 1400 kJ

Understand It with Pulse | Flag a mistake

12 **What is a reversible reaction?**

- A a reaction that makes two products
- B a reaction that never finishes
- C a reaction that needs a catalyst
- D a reaction that can go both ways

Understand It with Pulse | Flag a mistake

13 **What is evolution?**

A breeding by humans

B the creation of new species only

C change in organisms over time

D the extinction of species

Understand It with Pulse | Flag a mistake

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

A 600 cm^3/s

B 0.3333 cm^3/s

C 0.6667 cm^3/s

D 1.3333 cm^3/s

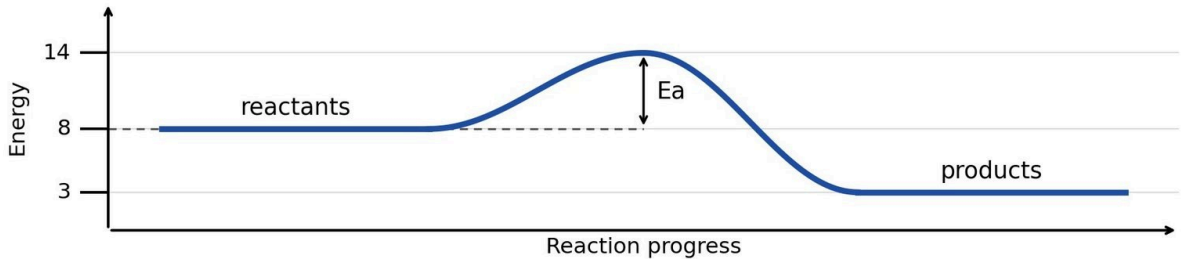
Understand It with Pulse | Flag a mistake

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

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

Understand It with Pulse | Flag a mistake

16 **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 5

B 6

C 22

D 11

Understand It with Pulse | Flag a mistake

17 **How can the spread of resistant bacteria be reduced?**

A stop washing hands

B only use antibiotics when needed

C use antibiotics for every illness

D share antibiotics

Understand It with Pulse | Flag a mistake

18 **In a reaction, the energy needed to break bonds is 1200 kJ and the energy released making bonds is 1400 kJ. What is the overall energy change?**

A -1200 kJ

B -200 kJ

C 1400 kJ

D 200 kJ

Understand It with Pulse | Flag a mistake

19 **What is an endothermic reaction?**

- A a reaction that takes in heat
- B a reaction that stops
- C a reaction that makes light
- D a reaction that gives out heat

Understand It with Pulse | Flag a mistake

20 **In an experiment, 60 cubic centimetres of gas are made in 10 seconds. What is the rate of the reaction?**

- A 3 cm^3/s
- B 6 cm^3/s
- C 12 cm^3/s
- D 600 cm^3/s

Understand It with Pulse | Flag a mistake

21 **What is the Haber process used to make?**

A nitric acid

B ammonia

C hydrogen

D sulfuric acid

Understand It with Pulse | Flag a mistake

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

A the allele never shows

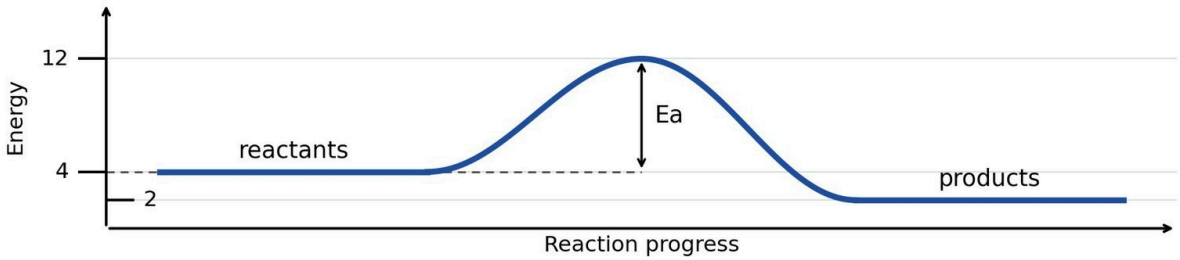
B the allele shows even with one copy

C the allele shows only with two copies

D the allele is on the X chromosome

Understand It with Pulse | Flag a mistake

23 **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 2. What is the activation energy?**



A 2

B 10

C 16

D 8

Understand It with Pulse

Flag a mistake

24 **Which of these is exothermic?**

- A photosynthesis
- B melting ice
- C dissolving ammonium nitrate
- D burning a fuel

Understand It with Pulse | Flag a mistake

25 **In an experiment, 40 cubic centimetres of gas are made in 10 seconds. What is the rate of the reaction?**

- A 8 cm^3/s
- B 2 cm^3/s
- C 400 cm^3/s
- D 4 cm^3/s

Understand It with Pulse | Flag a mistake

ANSWER KEY

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

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