ENGLAND GCSE CHEMISTRY OCR TWENTY FIRST CENTURY HIGHER · FINAL EXAM · 50 QUESTIONS

# Final Exam — 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 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

**2** **Lemons taste sour. What does sour taste show?**

- A an alkali is present
- B an acid is present
- C a salt is present
- D a metal is present

Understand It with Pulse | Flag a mistake

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

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

Understand It with Pulse | Flag a mistake

4 **A river flows to the sea. What is this part of?**

- A the water cycle
- B the carbon cycle
- C the rock cycle
- D the nitrogen cycle

Understand It with Pulse | Flag a mistake

5 **A castle built of limestone is damaged by acid rain. Which gas causes acid rain?**

- A carbon dioxide
- B oxygen
- C sulfur dioxide
- D nitrogen

Understand It with Pulse | Flag a mistake

6 **A school lunch tray holds a meal with milk. Which nutrient is milk rich in?**

- A fibre
- B iron
- C calcium
- D vitamin C

Understand It with Pulse | Flag a mistake

7 **What is the main gas in the air today?**

A argon

B carbon dioxide

C oxygen

D nitrogen

Understand It with Pulse | Flag a mistake

8 **Which of these is a simple covalent molecule?**

A NaCl

B MgO

C $CaCl_2$

D $CO_2$

Understand It with Pulse | Flag a mistake

**9** **What is the formula of ethene?**

- A $C_3H_6$
- B $CH_4$
- C $C_2H_4$
- D $C_2H_6$

Understand It with Pulse | Flag a mistake

**10** **Why do different dyes have different Rf values?**

- A they are all the same colour
- B they have the same solubility in the solvent
- C they move at the same speed
- D they dissolve differently in the solvent

Understand It with Pulse | Flag a mistake

11 **Why is an indicator used in a titration?**

A to show the end

B to cool the mixture

C to colour the acid

D to heat the mixture

Understand It with Pulse | Flag a mistake

12 **A reaction makes 3 moles of gas. What volume does the gas occupy at room temperature and pressure?**

A 60 $dm^3$

B 84 $dm^3$

C 72 $dm^3$

D 144 $dm^3$

Understand It with Pulse | Flag a mistake

13 **A swimming pool holds water. Why does a person float in the pool?**

- A their density is close to water
- B the water pushes them down
- C they are heavier than water and sink
- D they are made of air

Understand It with Pulse | Flag a mistake

14 **What is the charge on a chloride ion?**

- A $Cl^{2-}$
- B $Cl^{-}$
- C $Cl^{+}$
- D Cl

Understand It with Pulse | Flag a mistake

15 **What is condensation polymerisation?**

A polymers break into small molecules

B monomers burn to make a polymer

C monomers join with nothing lost at all ever

D monomers join and lose a small molecule

Understand It with Pulse | Flag a mistake

16 **An alloy is 75 percent copper. How much copper is in 400 kg of the alloy?**

A 325 kg

B 275 kg

C 600 kg

D 300 kg

Understand It with Pulse | Flag a mistake

17 **What is seen when sodium hydroxide is added to aluminium chloride solution?**

A a brown precipitate forms at once

B a white precipitate

C a blue precipitate forms at once

D a green precipitate forms at once

Understand It with Pulse | Flag a mistake

18 **A student heats 200 g of water. Its temperature rises by 5 degrees Celsius. The specific heat capacity of water is 4.2 joules per gram per degree Celsius. How much energy is transferred to the water in kilojoules?**

A 0.42 kJ

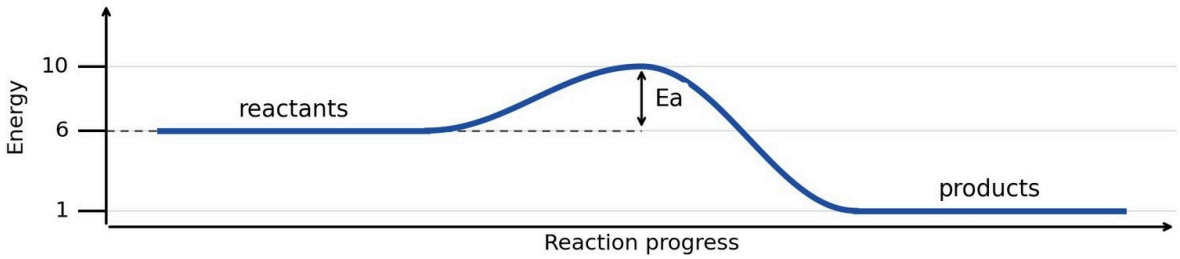
B 42 kJ

C 8.4 kJ

D 4.2 kJ

Understand It with Pulse | Flag a mistake

**19** **The diagram shows the energy profile for a reaction. The reactants are at energy 6 and the products are at 1. Is the reaction exothermic or endothermic?**




A exothermic, energy is taken in

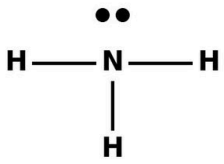
B endothermic, energy is given out

C exothermic, energy is given out

D endothermic, energy is taken in

Understand It with Pulse | Flag a mistake

**20** **The diagram shows an ammonia molecule. How many covalent bonds does the nitrogen atom form?**




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

Understand It with Pulse | Flag a mistake

**21** **What is made when ethanoic acid reacts with a carbonate?**

- **A** a salt and oxygen gas only in the test
- **B** a salt and hydrogen gas only in the test
- **C** water and hydrogen gas only in the test
- **D** a salt, water and carbon dioxide

Understand It with Pulse | Flag a mistake

22 **In a chromatogram, a spot moves 3 cm and the solvent moves 8 cm. What is the Rf value?**

- A 0.75
- B 0.38
- C 0.53
- D 0.47

Understand It with Pulse | Flag a mistake

23 **How can you test for hydrogen gas?**

- A a lighted splint pops
- B limewater turns cloudy
- C a glowing splint relights
- D a damp litmus paper

Understand It with Pulse | Flag a mistake

**24** **A reaction should make 100 g of product but only makes 90 g. What is the percentage yield?**

- **A** 90%
- **B** 180%
- **C** 100%
- **D** 80%

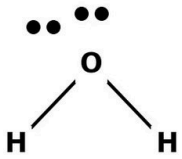
Understand It with Pulse | Flag a mistake

**25** **A factory emits 10 tonnes of carbon dioxide per day. How much does it emit in one week?**

- **A** 70 tonnes
- **B** 60 tonnes
- **C** 80 tonnes
- **D** 140 tonnes

Understand It with Pulse | Flag a mistake

**26** **The diagram shows a water molecule. How many lone pairs of electrons does the oxygen atom have?**




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

Understand It with Pulse | Flag a mistake

**27** **What is made at the negative electrode in aluminium extraction?**

- **A** oxygen gas from the air
- **B** carbon dioxide gas
- **C** cryolite from the mixture
- **D** aluminium

Understand It with Pulse | Flag a mistake

28 **What is chromatography used for in the food industry?**

A making food taste better

B checking dyes in food

C heating food more quickly

D keeping food cold longer

Understand It with Pulse | Flag a mistake

29 **What is the filtrate in filtration?**

A the filter paper

B the liquid collected

C the funnel

D the solid left behind

Understand It with Pulse | Flag a mistake

30 **Which acid makes a sulfate salt?**

A ethanoic acid

B nitric acid

C hydrochloric acid

D sulfuric acid

Understand It with Pulse | Flag a mistake

31 **In the combustion of methane, the energy needed to break the bonds is 1000 kJ and the energy released when new bonds form is 1400 kJ. What is the overall energy change?**

A -400 kJ

B -1000 kJ

C 400 kJ

D 1400 kJ

Understand It with Pulse | Flag a mistake

32 **An atom of sodium loses 1 electron. What is the charge on the ion formed?**

A 0

B +2

C +1

D -1

Understand It with Pulse | Flag a mistake

33 **What is the overall equation for a hydrogen fuel cell?**

A oxygen plus water makes hydrogen

B hydrogen plus nitrogen makes ammonia

C hydrogen plus oxygen makes water

D hydrogen plus oxygen makes carbon dioxide

Understand It with Pulse | Flag a mistake

34 **Which stage of a life cycle assessment covers digging up raw materials?**

A use

B disposal

C extraction

D manufacture

Understand It with Pulse | Flag a mistake

35 **What colour flame does sodium give?**

A yellow

B red

C blue

D bright green

Understand It with Pulse | Flag a mistake

36 **A solution has 10 g of salt in 2 cubic decimetres of water. What is its concentration?**

A 5 g/dm³

B 12 g/dm³

C 2 g/dm³

D 20 g/dm³

Understand It with Pulse | Flag a mistake

37 **In the combustion of methane, the energy needed to break the bonds is 1000 kJ and the energy released when new bonds form is 1200 kJ. What is the overall energy change?**

A -1000 kJ

B -200 kJ

C 200 kJ

D 1200 kJ

Understand It with Pulse | Flag a mistake

38 **What is the electronic structure of magnesium (atomic number 12)?**

A 2,8,2

B 2,8,8

C 2,8,1

D 2,7,3

Understand It with Pulse | Flag a mistake

39 **An alkane has 6 carbon atoms. How many hydrogen atoms does one molecule have?**

A 12

B 14

C 16

D 10

Understand It with Pulse | Flag a mistake

40 **In chromatography, what is the stationary phase?**

A the solvent

B the spots

C the ruler

D the paper

Understand It with Pulse | Flag a mistake

41 **What colour flame does potassium give in a flame test?**

A green

B lilac

C yellow

D brick red

Understand It with Pulse | Flag a mistake

42 **How many moles are there in 20 g of a substance with a relative formula mass of 20 ?**

A 2

B 0.5

C 1

D 3

Understand It with Pulse | Flag a mistake

43 **How do scientists know carbon dioxide levels are rising?**

A they measure the air

B they weigh the oceans

C they measure the sunlight

D they count the trees

Understand It with Pulse | Flag a mistake

44 **What did Mendeleev predict about the gaps in his table?**

A the gaps would stay empty for ever

B new groups would appear in the gaps one day

C elements would be found to fill them

D the table would need to be remade

Understand It with Pulse | Flag a mistake

45 **A river provides drinking water. Why must the water be treated before drinking?**

A to heat it up for use

B to make it taste better for drinking

C to add minerals for health

D to remove harmful substances

Understand It with Pulse | Flag a mistake

46 **In a chromatogram, a spot moves 2 cm and the solvent moves 10 cm. What is the Rf value?**

A 0.3

B 0.2

C 0.35

D 0.4

Understand It with Pulse | Flag a mistake

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

A they dissolve in water

B they do not conduct electricity at all

C they conduct electricity

D they are brittle

Understand It with Pulse | Flag a mistake

48 **How many moles of gas occupy 96 cubic decimetres at room temperature and pressure?**

A 3

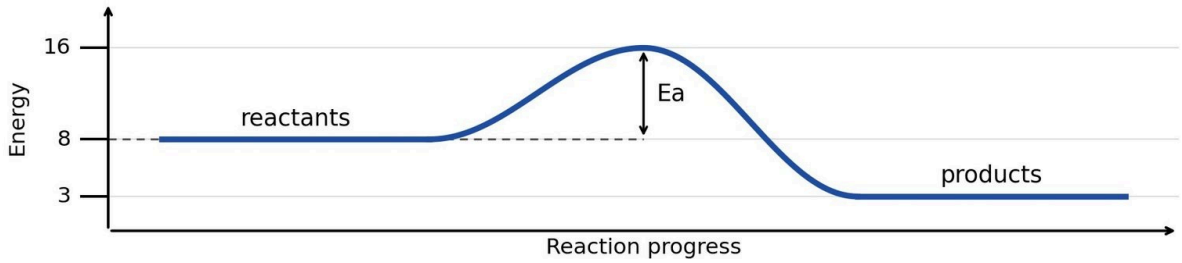
B 4

C 5

D 8

Understand It with Pulse | Flag a mistake

**49** **The diagram shows the energy profile for a reaction. The reactants are at energy 8, the peak is at 16 and the products are at 3. What is the activation energy?**




A 13

B 24

C 5

D 8

Understand It with Pulse | Flag a mistake

50 **Which group contains the alkali metals?**

A Group 1

B Group 2

C Group 7

D Group 0

Understand It with Pulse | Flag a mistake

# ANSWER KEY

1. C
2. B
3. B
4. A
5. C
6. C
7. D
8. D
9. C
10. D
11. A
12. C
13. A
14. B
15. D
16. D
17. B
18. D
19. C
20. B
21. D
22. B
23. A
24. A
25. A
26. B
27. D
28. B
29. B
30. D
31. A
32. C
33. C
34. C
35. A
36. A
37. B
38. A
39. B
40. D
41. B
42. C
43. A
44. C
45. D
46. B
47. C
48. B
49. D
50. A

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