

OCR Chemistry A-Level

PAG 11- pH measurement

(A level only)

Flashcards

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Give 3 ways you could identify whether a solution was acidic or basic



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1. Litmus paper
2. Indicator (e.g. universal indicator) and comparison to a colour scale
3. pH meter



How can litmus paper be used to identify an alkali?



How can litmus paper be used to identify an alkali?

Red litmus paper will turn blue

Blue litmus paper will remain blue



How can litmus paper be used to identify an acid?



How can litmus paper be used to identify an acid?

Blue litmus paper will turn red

Red litmus paper will remain red



Why might a pH meter be used rather than universal indicator to measure pH?



Why might a pH meter be used rather than universal indicator to measure pH?

- Gives a numerical value for pH
- More accurate (typically read to 2 decimal places)



What is meant by the term 'accuracy'?



What is meant by the term 'accuracy'?

How close the measurement is to the true value



What equations link pH and hydrogen ion concentration?



What equations link pH and hydrogen ion concentration?

$$\text{pH} = -\log[\text{H}^+]$$

$$[\text{H}^+] = 10^{-\text{pH}}$$



Briefly outline how to carry out a titration



Briefly outline how to carry out a titration

1. Use a pipette to measure the first solution into a conical flask
2. Add a few drops of a suitable indicator
3. Add the other solution into a burette and record the initial volume
4. Slowly add the solution in the burette into the conical flask
5. Swirl the mixture continuously until the end point is reached
6. Repeat until concordant results are obtained



What colour is methyl orange in:

- a) Acid?
- b) Alkali?
- c) Neutral solution?



What colour is methyl orange in:

- a) Acid?
- b) Alkali?
- c) Neutral solution?

- a) Red
- b) Yellow
- c) Orange



What is the colour of phenolphthalein in:

- Acid?
- Alkali?



What is the colour of phenolphthalein in:

- a) Acid?
- b) Alkali?

- a) Colourless
- b) Pink



What is a Brønsted-Lowry acid?



What is a Brønsted-Lowry acid?

A substance that donates protons (H^+)



What is a Brønsted-Lowry base?



What is a Brønsted-Lowry base?

A substance that accepts protons (H^+)



What is the difference between a strong and weak acid?



What is the difference between a strong and weak acid?

A strong acid **completely dissociates** in solution (readily releases H^+ ions) whereas a weak acid only **partially dissociates**



A solution has a pH of 1.00 when measured using a pH meter. Suggest the characteristics of this solution



A solution has a pH of 1.00 when measured using a pH meter. Suggest the characteristics of this solution

- Acidic
- Likely to contain a strong acid

