|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | 1 | 2 | 3 | 4 | 5 | 6 | | 7 | | 8 | 9 | 10 | | 11 | | 12 | 13 |
| Ind A | | Yellow | | orange | | | Red | | | | | | | | | | | |
| Ind B | | red | blue | | | | | | | | | | | yellow | | | | |
| Ind C | | Blue | | | | | | green | | yellow | | | | | | | | |
| Ind D | | red | | | purple | | | | | | blue | | | | | | | |
| Ind E | | colorless | | | | | | | blue | | | | | | | dark blue | | |

**pH class worksheet**

1. Which indicator would you use to find a strong acid\_\_A, B\_\_, a strong base\_\_E\_\_\_ and a neutral

solution? \_\_\_C\_\_\_\_\_\_

1. Which indicator would you use to find a weak acid? \_\_\_A\_\_\_
2. What color would indicator D give if a substance that has a pH of 5 is used? \_purple\_\_\_\_\_
3. What color would indicator B give if it has a pH of 9? \_blue\_\_\_
4. What is the pH of a substance if it becomes yellow with A and blue with B? \_\_\_2\_\_
5. What is the pH of a substance if it becomes dark blue with E and yellow with B? \_11-13\_\_\_\_
6. What is the pH of a substance if it becomes purple with D and blue with E? \_7\_\_
7. What is the pH of a substance if it becomes red with A and blue with C? \_\_6\_\_\_
8. What is the pH range if indicator A turns orange? \_3-5\_\_\_\_\_\_
9. What is the pH ator C turns yellow? \_7.5-13\_

er

1. A solution that conducts electricity and that turns litmus paper blue

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **pH Scale** | **2** | **3** | **4** | **5** | **6** | | **7** | **8** | | **9** | **10** | **11** | **12** |
| **Indicator 1** | Yellow | | | | | Green | | | Blue | | | | |
| **Indicator 2** | Colourless | | | | | | | | Pink | | Fuchsia | | |
| **Indicator 3** | Red | | Orange | | | Yellow | | | | | | | |
| **Indicator 4** | Red | | | | Orange | | | | Yellow | | | Green | |

The pH of a given solution is unknown. Indicators 1 and 3 turn yellow in this solution.

What colour will indicator 4 become in this solution? orange

1. The following table gives the colours of two acid-base indicators when they are added to solutions with different pH values.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **pH Scale** | 1 | 3 | | 5 | | 7 | 9 | | 11 | 13 |
| **Solution A** | Red | | Orange | | Yellow | | | | | |
| **Solution B** | Yellow | | | | | Green | | Blue | | |

The pH of solution A is 2 and the pH of solution B is 13. What was the colour of solution A and the colour of solution B?

1. Solution A is red and solution B is yellow.
2. Solution A is yellow and solution B is blue.
3. Solution A is orange and solution B is green.
4. Solution A is red and solution B is blue.
5. In the lab, you are given two acidic solutions. One has a pH value of 5, and the

other has a pH value of 6.8. Name the best indicator that would allow you to distinguish between the two solutions?

1) Methyl orange

|  |  |  |  |
| --- | --- | --- | --- |
| pH | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 | | |
|  | red | Orange | yellow |

2) Bromothymol blue

|  |  |  |  |
| --- | --- | --- | --- |
| pH | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 | | |
|  | Yellow | Green | blue |

3) Phenolphthalein

|  |  |  |  |
| --- | --- | --- | --- |
| pH | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 | | |
|  | Colourless | pink | dark pink |

4) m-Cresol purple

|  |  |  |  |
| --- | --- | --- | --- |
| pH | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 | | |
|  | Yellow | brown | violet |

1. The table below indicates the colour of the indicator phenol red in solutions with a pH varying from 1 to 12.



A drop of this indicator is added to some lemon juice.

What colour is the indicator after being added to the lemon juice?

Yellow