Experiment Details

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| Department Name | Civil Engineering |
| Class | T.Y. B.Tech |
| Semester | Ist |
| Subject Name | Environmental Engineering-II |
| Experiment No. | 1 |
| Experiment Name | Determination of pH of given Wastewater sample. |

Version History

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| --- | --- | --- | --- | --- |
| Sr. No. | Version Number | Created By | Approved By | Date |
| 1 | v1.0 | Akshay Devalapurkar | Prof. Sunil Mane | 09/10/202 |
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AIM:

To Determine the pH of given wastewater

THEORY:

pH is the negative log10 of hydrogen ion concentration in a solution. It can be measured by colorimetric methods using various indicators or paper strips. However the use of colorimeter methods is less convenient and less accurate. For accurate measurements of pH, electrometric methods are used employing the hydrogen ion sensitive electrodes.

PRE TEST:

Q.1) **Range of pH scale is**

1. 7 to 10
2. 0 to 10
3. 0 to 14
4. 7 to 14

**Answer: (c)**

**Q.2)What is the pH of acidic solution?**

a.Zero

b.Less than 7

c.More than 7

d.More than 12

**Answer: (b)**

**Q.3) What happens to the pH of a solution if a little acid is added to it?**

a. pH turns into zero

b. Remains the same

c. Increases

d. Decreases

**Answer: (d)**

Q.4) **What is the pH of pure water at 25°C?**

**a. 2**

**b. 4**

**c. 7**

**d. 10**

**Answer: (c)**

**Q.5) The rainfall may be classified as acidic if its pH value is less than or equal to**

**a. 3**

**b. 5**

**c. 6.5**

**d. 7**

**Answer: (b)**

PROCEDURE:

1. Calibrate the pH meter with suitable buffers whose value is near to the expected pH value.

2. Take the reading.

3. Follow the instructions given by the manufacturer.

4. Buffers of different pH values can also be made in laboratory in following manner.

A. Potassium Hydrogenphthalate buffer

Dissolve 10.2 g of potassium hydrogenphthalate in water to prepare 1000 ml of buffer.

B. Phosphate Buffer

Dissolve 3.40 g of KH2PO4 and 4.45 g of Na2HPO4.2H2O

C. Borax buffer

Dissolve 3.81 g of Na2B4O7.10H2O in water to prepare 1000 ml of buffer.

POST TEST:

Q.1) **When acids react with metal oxide it produces**

1. water and salt
2. salts and hydrogen gas
3. salts only
4. no reaction takes place

**Answer: (a)**

**Q.2) When more and more water is diluted with acids its H+ ion concentration will**

1. increase
2. decrease
3. remains the same
4. depends on the type of acids

**Answer: (b)**

**Q.3) When acids react with metal oxide it produces**

1. water and salt
2. salts and hydrogen gas
3. salts only
4. no reaction takes place

**Answer: (a)**

Q.4) pH of neutral salt is

1. 7
2. <7
3. >7
4. 0

Answer: (a)

Q.5) [The pH value of fresh sewage is usually \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_?](https://pakmcqs.com/civil-engineering-mcqs/the-ph-value-of-fresh-sewage-is-usually-______________________)

a. Equal to 7  
b. More than 7  
c. Less than 7  
d. Equal to zero

Answer: (b)

REFERENCES:

1. Waste water Engineering, P. N. Modi.

2. Waste Water Engineering By S K Garg

3. Water supply, Waste Disposal and Environmental Engineering, A.K.Chatterjee, Khanna Publishers

4. Manual on sewerage and sewage Treatment-Government of India Publication.