

CHEMISTRY

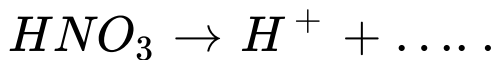
BOOKS - V PUBLICATION

ACIDS BASES AND SALTS

Question Bank

1. Complete the chemical equations for the following ionisation reactions:

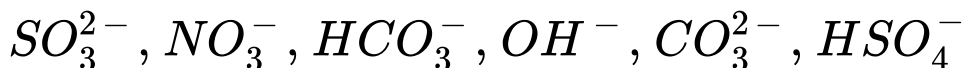




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2. Identify the symbols of ions from the box and write against their names

(



)

Carbonate -

Bisulphate -

Sulphite -

Nitrate -

Hydroxide -

Bicarbonate -



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3. a) Name the salt formed by the reaction between magnesium hydroxide [$Mg(OH)_2$],

and dilute hydrochloric acid (HCl).

b) Write the chemical equation for the reaction.

c) Which acid is used for preparing Magnesium sulphate?



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4. A little distilled water is taken in a beaker.

A) What is the pH of distilled water?

B) What happens to the pH value when the following substances are added to the water

in the beaker? Justify your answer.

a) Caustic soda

b) Vinegar



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5. The pH value of some substances are given in the table. Analyse the table and answer the questions.

Is blood acidic or alkaline?

b) The pH value of pure milk is 6.4. Does the pH value increase or decrease when milk changes

to curd? Justify your answer.

c) Among the substances given in the table,

i) Which one is strongly alkaline?

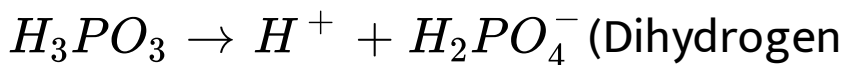
ii) Which one has weak acidic nature?

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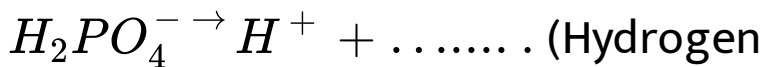


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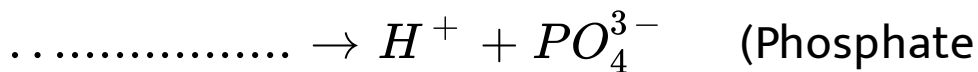
6. a) Complete the chemical equations for the ionisation of phosphoric acid.



phosphate ion)



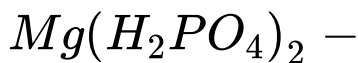
phosphate ion)



ion)

b) How many types of salts can be formed by phosphoric acid? Why?

c) Write the chemical name of the following salts:



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7. Solutions of sodium carbonate , potassium chloride, and ammonium sulphate are taken in separate beakers. Dip litmus paper (red, blue) in each beaker.

i) Observe the colour change of litmus paper and tabulate.

ii) Name the acid and alkalis that react with each other to form each of the salts given above.

iii) Can you explain the colour change of the litmus paper on the basis of the nature of the acid and alkali that react with each other to

form the salt?

(Hint: Potassium chloride is a salt formed by the reaction between strong acid and strong alkali)

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8. Which of the following is used as a chemical fertiliser?

($NaCl$, HNO_3 , $(NH_4)_2SO_4$, $BaCl_2$)



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9. What is the pH of water?

(0, 5, 7, 14)



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10. Find the relation and fill in the blanks :

Table salt: Sodium chloride

Washing soda:



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11. The substances that help to identify ACID AND ALKALIES are



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12. Acids react with metal to form



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13. Acids react with carbonates to form



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14. _____ is used to determine the acidic or alkaline property of substance.



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15. Acids dissolve in water to form



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16. The highest pH value in the alkaline medium.



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17.is the pH value of neutral solution



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18.is the main components in acid.



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19. In neutralisation process,.....ions of acids andions of alkalies are combined to form water.



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20.is used to determine the acidity of soil.



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21. Acids react with alkali to form salt and water. The process is known as



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22. Medicine to simplify the acidity in the stomach.



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23. It is necessary to determine the pH of soil before farming. Give reason for this statement.



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24. Find out the wrong statement.

a) The pH value of all solution are in between zero and 14.

b) The pH value of neutral solution is zero.

c) The solution having pH less than 7 shows acidic nature.

d) The solution having pH value more than 7 shows basic nature.



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25. Take some water in a test tube. Pass the sulphur dioxide (SO_2) gas through it.

a) Dip a litmus paper in the solution thus obtained. What do you observe?

b) Write down the chemical equation of the reaction taking place there.



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26. By analysing the soil from his farm, a farmer found that the pH of soil is 5.9.

a) Identify whether the soil is acidic or basic in nature.

b) For a particular crop giving high yield in neutral soil, which type of substance needs to be mixed with the above soil. Give example



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27. SO_2 is a gas responsible for acid rain.

a) Name the acid which is formed when SO_2 dissolves in water.

b) Give the balanced chemical equation for the above reaction.



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28. a) Which of the following represent tri basic acid?

(H_2CO_3 , HNO_3 , H_3PO_4 , HCl , H_2SO_4)

b) Complete the following chemical equations:



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29. a) pH of a compound is 3.5. Is it acid or alkali?

b) What is the pH value of salt. Why?



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30. a) The original beauty of Taj Mahal that is made of marble ('CaCO₃') is gradually fading.

Why?

b) Write 2 environmental problems caused by acid rains?



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31. Find relation and fill in the blanks:

i) Lemon : Citric acid

Tamarind :

ii) Acid: ...(b)...

Alkali: Bitter taste



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32. Molecular formula of a few acids are given.

$[H_2SO_3, H_2CO_3, HNO_3, H_2SO_4]$

a) Find the odd out

b) Write down the ionisation equation of this acid.



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33. A little distilled water is taken in a beaker.

A) What is the pH of distilled water?

B) What happens to the pH value when the following substances are added to the water in the beaker? Justify your answer.

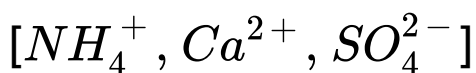
a) Caustic potash

b) Lemon juice



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34. Given below are few ions



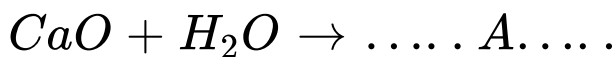
a) Write down the molecular formula of any one compound formed from the given ions.

b) Mention any one use of this salt.



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35. Given below is the equation of the reaction between calcium oxide and water.



a) Identify the product A.

b) What is the nature of A?

c) Suggest a method to identify A.



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36. a) During rainy season slaked lime is sprinkled over agricultural fields. Why is this done?

b) What is the reason behind this?

c) There are instances of increased alkali in soil.

What type of substances are added in such situations?



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37. Two solutions A and B have pH values of 3 and 8.

a) Find the acid and alkali among them.

b) How will you identify them?

c) Which solution will turn phenolphthalein solution to pink?



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38. A person showing symptoms of acidity approached a doctor. The medicine prescribed

by the doctor contained aluminium hydroxide, magnesium hydroxide, etc.,

a) Which chemical in the stomach is responsible for acidity?

b) What is the common name of this type of medicines?

c) Acidity was controlled upon taking the medicine. Explain the chemical reaction that took place here.



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39. HCl, KCl, NaCl, KOH, NaOH

Observe the chemical formula given above.

a) Choose an acid and alkali to perform a neutralisation reaction.

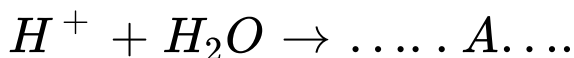
b) Write the salt produced as a result of this chemical reaction from those given above.

c) Write the balanced chemical equation of this reaction.



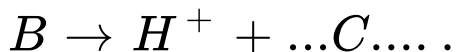
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40. Given below are the equations of the reaction taking place when hydrochloric acid dissolves in water.



a) What is A in this equation?

b) The following shows the ionisation of H_2SO_4 . Complete the equation.



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41. Soda water is made by dissolving carbon dioxide in water under high pressure.

a) Choose the molecular formula of soda water from the following:

$(H_2SO_4, H_2CO_3, H_2SO_3, HNO_3)$

b) What change in colour do you observe when a blue litmus paper is dipped in soda water?

c) Give reason for the colour change.



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42. Write down the molecular formula of the acid formed when the oxide gets dissolved in water.

c) Write down the ionisation reaction of the acid obtained in (b).

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43. Complete the table given below.

| Element | Electronic configuration | Protons | Neutrons | Electrons |
|-------------------------|--------------------------|---------|----------|-----------|
| ${}^2_2\text{He}$ | 2 | 2 | 2 | 2 |
| ${}^{59}_{27}\text{Co}$ | ...a... | 27 | ...b... | ...c... |
| ${}^{12}_6\text{C}$ | 2,4 | ...d... | ...e... | ...f... |

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44. HCl , KOH , $Ca(OH)_3$, H_2SO_4 , $ZnCl_2$

Given are the chemical formula of certain substances.

a) Which among these are alkalies?

b) On what basis are they treated as alkalies?

c) Which among these are neither alkalies nor acids?

d) Name the product formed when the common factor of acid and alkali combine with each other.



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45. Procedure of an experiment is given below.

Take some calcium carbonate in a boiling tube.

Add hydrochloric acid to it using a thistle

funnel. The gas coming out is passed through

water containing blue litmus solution.

a) Name the gas evolved?

b) Suggest a method to identify this gas.

c) What changes take place when this gas is

passed through water containing blue litmus

solution? Give reason.



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46. pH value of some substances are given in the table given below: Answer the following questions:

a) Which one of them shows neutral nature?

b) Which substance among them usually reacts with metals to produce hydrogen gas.

c) Name a product formed when B and C combine.

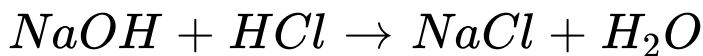
d) Identify the gas formed when the substance C reacts with carbonates?

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47. Given below is the equation of a chemical reaction between an acid and an alkali .



- Which is the salt formed in this reaction?
- What is such type of reactions commonly known as?
- Name the salt formed when H_2SO_4 is used instead of HCl?
- Write down the chemical equation of this reaction.



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48. The medicines used to reduce acidity are known as

(Acids, Antacids, Alkalies, salt)



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49. Which one of the following compound is not used as chemical fertiliser?

[$(NH_4)_2SO_4$, KCl , $NaHCO_3$, $NaNO_3$]



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50. Which is the cation present in $MgCl_2$ solution?



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51. Which among the following can be the pH of lime juice?

(1,4,7,10)



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52. Number of hydroxide ions increased on dissolving a substance X in water. To which category does the substance X belong?



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53. When an acid reacts with alkali, the products obtained are magnesium sulphate and water.

a) Name the acid used in this reaction.

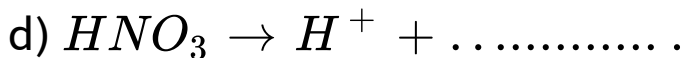
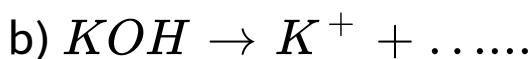
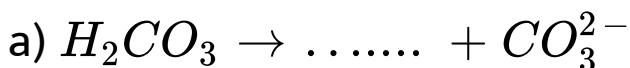
b) Identify the alkali used here.





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54. Complete the following ionic equations:



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55. Take some water in a test tube. Pass the sulphur dioxide (SO_2) through it.

a) Dip a litmus paper in the solution thus obtained. What do you observe?

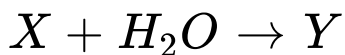
b) Write down the chemical equation of the reaction taking place there.



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56. The equations of ionisation reaction when hydrochloric acid dissolves in water are given below.



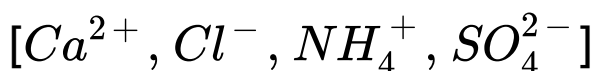


Identify X and Y.



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57. The symbols of a few ions are given in the box.



a) Identify the cations

b) Identify the anions

c) Write down the molecular formula of all the

possible compounds using the given cation and anions.



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58. The molecular formula of sodium sulphate Na_2SO_4 .

a) Which is the anion in this compound.

b) Write down the molecular formula of the compound formed when the anion of sodium sulphate combines with ammonium (NH_4^+), mention any one use of it.



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59. Match the following 



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60. a) Classify the following in the acidic and basic oxides.

(CaO, CO_2, MgO, SO_2)

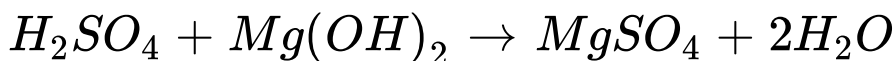
b) Name the gases found in large quantities in the materials expelled from the factories.

c) Which are the acid obtained when these gases dissolve in water?



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61. Analyse the following chemical equation and answer the following question:



a) Identify the substance which is basic in nature.

b) Name the salt formed.

c) Name the acid and abse which are required to produce potassium nitrate?



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