

# ACIDS, BASES, SALTS AND METALS BASED GENERAL SCIENCE MCQ PRACTICE QUESTIONS AND ANSWERS PDF WITH EXPLANATION

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**Q1.** Bases turn red litmus blue and acids turn blue litmus red. A student tested a liquid with a red litmus paper and it stayed red with no change. This shows that the liquid

- a) is not a base
  - b) must be pure water
  - c) must be an acid
  - d) is neither a base nor an acid
- 

**Q2.** The concentration of hydrochloric acid in a given solution is  $10^{-8}$  M. What is the value of pH for this solution ?

- a) 7
  - b) 7
  - c)  $> 7$  but not 14
  - d) 14
- 

**Q3.** Which of the following compounds is basic in nature ?

- a)  $\text{CaCl}_2 \cdot 6\text{H}_2\text{O}$
  - b)  $\text{NaCl}$
  - c)  $\text{Ca}(\text{OH})_2$
  - d)  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$
- 

**Q4.** Which of the following statement is true?

- a) Bases are sour in taste

- b) The reaction between acid and a base is exothermic reaction
- c) Acids are bitter in taste
- d) The reaction between an acid and a base is endothermic reaction.

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**Q5.** Washing soda has the formula –

- a)  $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$
- b)  $\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$
- c)  $\text{Na}_2\text{CO}_3 \cdot 7\text{H}_2\text{O}$
- d)  $\text{Na}_2$

**Q6.** Acid rain is caused due to \_\_\_\_\_ .

- a)  $\text{CO}_2$  ,  $\text{NO}_2$  ,  $\text{H}_2$
- b)  $\text{SO}_2$   $\text{N}_2$  ,  $\text{O}_2$
- c)  $\text{CO}_2$  ,  $\text{O}_2$  ,  $\text{SO}_2$
- d)  $\text{CO}_2$  ,  $\text{SO}_2$  ,  $\text{NO}_2$

**Q7.** Which of the following is 'quicklime' –

- a)  $\text{Ca}(\text{OH})_2$
- b)  $\text{CaCO}_3$
- c)  $\text{CaO}$
- d)  $\text{CaCl}_2 \cdot 6\text{H}_2\text{O}$

**Q8.** Baking soda is

- a) Sodium Dihydrogen Carbonate

- b) Disodium Hydrogen Carbonate
  - c) Sodium Hydrogen Carbonate
  - d) Sodium Carbonate
- 

**Q9.** Which of the following is a weak base ?

- a) KOH
  - b)  $\text{NH}_4\text{OH}$
  - c) NaOH
  - d) none of these
- 

**Q10.** Common salt besides being used in the kitchen can also be used as the raw material for making

- i. Washing soda
  - ii. Bleaching powder
  - iii. Baking soda
  - iv. Slaked lime
- a) (i), (ii) and (iv)
  - b) (i) and (iii)
  - c) (i) and (ii)
  - d) (i), (iii) and (iv)
- 

**Q11.** An unknown gas quickly dissolves in water. This gaseous aqueous solution turns red litmus into the blue. This gas produces hydrogen chloride with a white flame. This unknown gas is

- a) Nitric hydroxide
  - b) Ammonia
  - c) Sulphur dioxide
  - d) Carbon monoxide
- 

**Q12.** When vinegar reacts with baking soda the gas evolved is

- a) oxygen
- b) carbon dioxide
- c) hydrogen
- d) nitrogen dioxide

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**Q13.** The acid in gastric juice is

- a) hydrochloric acid
- b) acetic acid
- c) nitric acid
- d) sulphuric acid

**Q14.** A solution turns red litmus blue. The pH of solution is

- a) 1
- b) 5
- c) 7
- d) None of these

**Q15.** Which one among the following is an electrochemical cell that cannot be charged ?

- a) Primary cell
- b) Electrolytic cell
- c) Storage cell
- d) Fuel cell

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## Answers to the above questions :

Q1. Answer: (b)

Q2. Answer: (a)

Q3. Answer: (c)

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**Q4. Answer: (b)**

This reaction is exothermic.

i.e. Heat is evolved  $\text{HCl} + \text{NaOH} \rightarrow \text{NaCl} + \text{H}_2\text{O} + \text{Heat}$

**Q5. Answer: (a)**

**Q6. Answer: (d)**

Acid rain is caused due to increased pollution in the air.

The poisonous gases like sulphur dioxide, carbon dioxide and nitrogen dioxide react with water to form sulphuric acid, carbonic acid and nitric acid respectively.

**Q7. Answer: (c)**

**Q8. Answer: (c)**

**Q9. Answer: (b)**

NH<sub>4</sub>OH as it is not get completely ionized in aqueous solution.

**Q10. Answer: (b)**

$\text{NaCl} + \text{H}_2\text{O} + \text{CO}_2 + \text{NH}_3 \rightarrow \text{NH}_4\text{Cl} + \{\text{NaHCO}_3\}$  ?\text{"Baking soda"}\$

$2\text{NaHCO}_3 \xrightarrow{\text{heat}} \text{Na}_2\text{CO}_3 + \text{H}_2\text{O} + \text{CO}_2$

$\{\text{Na}_2\text{CO}_3\}$ ?\text{"Sodium carbonate"} + 10 H<sub>2</sub>O ?  $\{\text{Na}_2\text{CO}_3 \cdot 10 \text{H}_2\text{O}\}$  ?\text{"Hydrated sodium carbonate (washing soda)}"\$

**Q11. Answer: (b)**

**Q12. Answer: (b)**

Vinegar is acetic acid and baking soda is sodium hydrogen carbonate (a base).

Whenever an acid reacts with a metal carbonate it produces carbon dioxide gas.

$\text{CH}_3\text{COOH} + \text{NaHCO}_3 \rightarrow \text{CH}_3\text{COONa} + \text{H}_2\text{O} + \text{CO}_2$

**Q13. Answer: (a)**

**Q14. Answer: (d)**

**Q15. Answer: (a)**

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