



CHEMISTRY

BOOKS - ARIHANT CHEMISTRY (HINGLISH)

S BLOCK ELEMENTS

Practice Ex

1. Which of the following ions forms a hydroxide which is highly soluble in water?



Answer: b

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2. Solubility of alkaline earth metal sulphates decreases down the group 2 because

- A. they become more ionic
- B. lattice energy of sulphates does not vary significantly
- C. hydration energy decreases rapidly from Be^{2+} to Ba^{2+}
- D. lattice energy plays more predominant role than hydration energy

Answer: c

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3. Which of the following compounds has the lowest anion to cation size ratio ?

A. LiF

B. NaF

C. CsI

D. CsF

Answer: d

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4. Which is the most basic among the following?

A. Na_2O

B. BaO

C. As_2O_3

D. Al_2O_3

Answer: a

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5. The stability of the following alkali metal chlorides follows the order:

A. $LiCl > KCl > NaCl > CsCl$

B. $CsCl > KCl > NaCl > LiCl$

C. $NaCl > KCl > LiCl > CsCl$

D. $KCl > CsCl > NaCl > LiCl$

Answer: d

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6. When CO is passed over solid NaOH heated to $200^\circ C$, it forms

A. Na_2CO_3

B. H_2CO_3

C. $HCOONa$

D. All of these

Answer: c

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7. Which of the following does not illustrate the anomalous properties of lithium?

A. Li is much softer than the other group 1 metals

B. The melting point and boiling point of Li are comparatively high

C. Li forms a nitride Li_3N unlike group 1 metals

D. The ion of Li and its compounds are more heavily hydrated than those of rest of the group 1 elements

Answer: a

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8. The pairs of compounds which cannot exist together in aqueous solution are

A. Na_2CO_3 and $NaHCO_3$

B. $NaHCO_3$ and NaOH

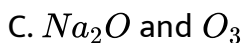
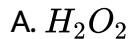
C. Na_2CO_3 and NaOH

D. NaOH and NaCl

Answer: b

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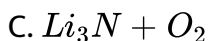
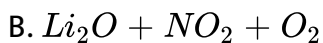
9. Sodium peroxide, a yellow solid, when exposed to air becomes white due to the formation of

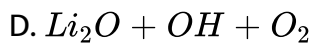


Answer: d

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10. The products obtained on heating $LiNO_3$ will be

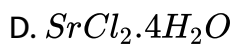
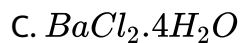
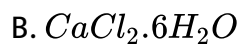
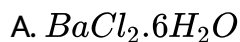




Answer: b

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11. Identify the correct formula for halides of alkaline earth metals.



Answer: b

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12. Why is LiF almost insoluble in water whereas $LiCl$ soluble not only in water but also in acetone?

- A. high hydration enthalpy of Li^+
- B. low hydration enthalpy of Li^+
- C. more ionic character in $LiCl$
- D. None of the above

Answer: a

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13. Consider the following statements.

- I. BeO is insoluble but $BeSO_4$ is soluble in water.
- II. BaO is insoluble but $BaSO_4$ is soluble in water.
- III. LiI is more soluble than KI in ethano. The true statements are

- A. I and II

B. I and III

C. II and III

D. I,II and III

Answer: b

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14. Which of the following statements is/are incorrect regarding the s-block elements?

I. Francium is highly radioactive element.

II. Oxides and hydroxides of alkali metals and alkaline earth metals are not alkaline in nature.

III. Sodium and potassium are the only two s-block elements which are found in large proportion in biological fluids.

IV. Biological function of s-block elements is due to maintenance of ion balance and nerve impulse condition.

- A. Only I
- B. I and III
- C. II and III
- D. Only III

Answer: c

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15. Match the Column I with Column II and choose the correct option from codes given below.

Column I	Column II
A. Sodium	1. Present in biological fluid
B. Beryllium	2. Radioactive element
C. Francium	3. Lower abundance
D. Calcium	4. Alkali metal
	5. Alkaline earth metal

A. *A B C D*
1 4 2 5

B. *A B C D*
1 2 3 4

- C.

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
3	1	2	5
- D.

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
4	5	2	1

Answer: d

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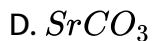
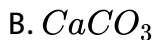
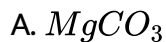
16. Which of the following is/are correct pair(s) regarding diagonally related elements?

- A. Beryllium and aluminium
- B. Lithium and magnesium
- C. Sodium and aluminium
- D. Both a and b.

Answer: d

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17. The decomposition temperature is maximum for



Answer: c



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18. Which of the following metal salts has highest conductivity in aqueous medium?



D. K^+

Answer: b

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19. In the case of alkali metals, the covalent character decreases in the order.

A. $MI > MBr > MCl > MF$

B. $MCl > MI > MBr > MF$

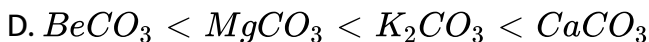
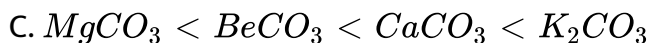
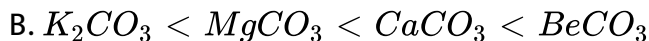
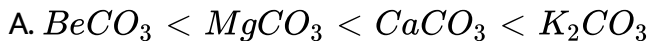
C. $MF > MCl > MBr > MI$

D. $MF > MCl > MI > MBr$

Answer: a

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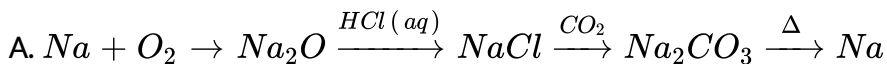
20. The correct order of increasing thermal stability of K_2CO_3 , $MgCO_3$, $CaCO_3$, and $BeCO_3$ is



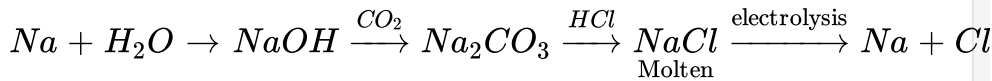
Answer: a

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21. Which of the following sequence of chemical reaction is correct?



D.



Answer: d



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22. The ore of potassium is

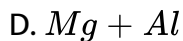
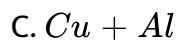
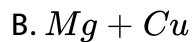
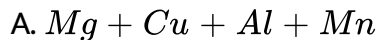
- A. bauxite
- B. dolomite
- C. carnalite
- D. cryolite

Answer: c



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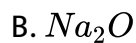
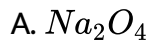
23. Duralumin is an alloy of



Answer: a

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24. When sodium is reacted with limited supply of oxygen, the main compound formed is



D. Na_2O_2

Answer: b

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25. Metallic magnesium is prepared by

- A. electrolysis of molten $MgCl_2$
- B. displacement of Mg by iron from $MgSO_4$ solution
- C. electrolysis of aqueous solution of $Mg(NO_3)_2$
- D. reduction of MgO by coke

Answer: c

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26. The element which is not present in asbestos, is

A. Si

B. Ca

C. Ba

D. Mg

Answer: c

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27. The molarity of Na^+ , when the average concentration of Na^+ in human blood serum is about $3.4 \text{ g } L^{-1}$, is

A. 8.4

B. 2.3

C. 0.68

D. 0.15

Answer: d

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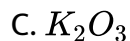
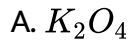
28. Caesium is the most reactive metal in the alkali metal series because

- A. it exerts considerable attractive force on valence electrons
- B. it is a heavier metal
- C. its incomplete shell is nearest to the nucleus
- D. its valence electron has the highest principal quantum number than the valence electron of any of the others.

Answer: d

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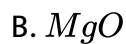
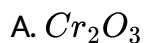
29. When oxygen reacts with potassium, which of the following is preferentially formed?



Answer: b

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30. Which of the following is different from other three oxides?



D. ZnO

Answer: b

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31. Nitrogen dioxide cannot be obtained by heating

A. KNO_3

B. $Pb(NO_3)_2$

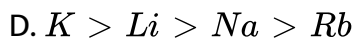
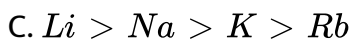
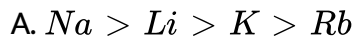
C. $Cu(NO_3)_2$

D. $AgNO_3$

Answer: a

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32. The correct decreasing order of ionisation enthalpy of alkali metals is



Answer: c

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33. The gas evolved on heating Na_2CO_3 is



B. water vapour

C. CO

D. No gas is evolved

Answer: d

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34. A mixture contains two moles of Na_2CO_3 and 1 mole of Li_2CO_3 . What will be the volume of CO_2 formed on heating this mixture and the data is converted to STP?

A. 22.4L

B. 44.8 L

C. 50.2L

D. 11.2L

Answer: a

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35. An aqueous solution of sodium carbonate is alkaline because sodium carbonate is a salt of

- A. weak acid and weak base
- B. strong acid and weak base
- C. weak acid and strong base
- D. strong acid and strong base

Answer: c

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36. Sodium is heated in air at $350^{\circ}C$ to form a compound A when reacts with carbon dioxide forms sodium carbonate and Y. Here, Y is

- A. hydrogen peroxide
- B. hydrogen

C. ozone

D. oxygen

Answer: d



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37. On reacting with NaOH, which gives inflammable gas?

A. Zn

B. S

C. I_2

D. NH_4Cl

Answer: a



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38. When washing soda is heated

- A. CO_2 is released
- B. $CO + CO_2$ is released
- C. CO is released
- D. water vapour is released

Answer: d

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39. In the synthesis of sodium carbonate, the recovery of ammonia is done by treating NH_4Cl with $Ca(OH)_2$. The by-product obtained in this process is

- A. $CaCl_2$
- B. $NaCl$
- C. NaOH

D. NaHCO_3

Answer: b

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40. Solvay process is not used to prepare KHCO_3 . Which of the following reactions will produce KHCO_3 ?

A. $\text{KHSO}_4 + \text{KCl} \rightarrow$

B. Magnesia process

C. $\text{KNO}_3 + \text{H}_2\text{O} \rightarrow$

D. Calcium carbonate and silver chloride

Answer: B

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41. Chemical name of soda ash is

A. sodium bicarbonate

B. sodium hydroxide

C. sodium carbonate

D. None of these

Answer: C



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42. In the electrolytic process for the manufacturing of NaOH from NaCl solution, the ion discharged at the anode is

A. OH^-

B. O^-

C. Cl^-

D. All of these

Answer: c

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43. Anhydrous magnesium chloride is prepared by

A. dissolving Mg in dil. HCl

B. dissolving MgO in dil. HCl

C. Passing Cl_2 over red hot mixture of $MgO + C$

D. All of the above

Answer: c

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44. A substance which gives brick red flame and breaks down on heating to give oxygen and a brown gas, is

A. magnesium nitrate

B. calcium nitrate

C. barium nitrate

D. strontium nitrate

Answer: b

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45. A chemical A is used for the preparation of washing soda to recover ammonia. When CO_2 is bubbled through an aqueous solution of A, the solution turns milky. It is used in white washing due to disinfectant nature what is the chemical formula of A?

A. $Ca(HCO_3)_2$

B. $Ca(OH)_2$

C. $CaCO_3$

D. None of these

Answer: c

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46. Element (A) burns in nitrogen to give an ionic compound, (B) reacts with water to give (C) and (D). A solution of (C) becomes milky on bubbling carbon dioxide. Identify (A),(B),(C) and (D)

A. Li

B. Mg

C. ca

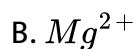
D. Be

Answer: c



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47. The metal ion which plays an important role in muscle contraction is



Answer: c



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48. Mix calcium sulphate with conc. HCl and forms a paste. Bring a pinch of this paste near to the flame, what colour will you obtain?

- A. Brick red
- B. Apple green
- C. Goldent yellow
- D. Crimson red

Answer: a



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49. In curing cement plasters, water is sprinkled from time to time.

This helps in

- A. converting sand into silicic acid
- B. keeping it cool
- C. developing interlocking needle like crystals of hydrated silicates
- D. hydrating sand and gravel mixed with cement

Answer: c

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50. What will be the oxidation states of nitrogen and alkali metal respectively when the nitrogen and alkali metal react with each other?

A. -3 and $+1$

B. -1 and $+1$

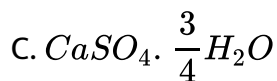
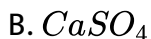
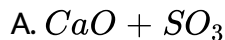
C. -1 and -1

D. -3 and -1

Answer: a

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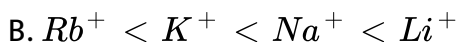
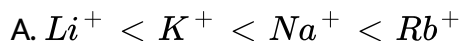
51. What will you get when you heat hydrated $CaSO_4$ to $125^\circ C$ instead of $200^\circ C$?

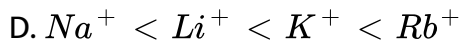
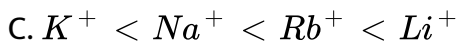


Answer: d

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52. The ease of adsorption of the hydrated alkali metal ions on ion-exchange resins follows the order:





Answer: b

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53. Which of the following represent the correct composition of Sorel cement?

A. Portland cement +MgO

B. $CaSiO_3 \cdot MgCO_3$

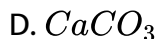
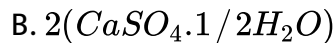
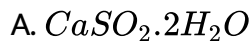
C. $MgCl_2 \cdot CaSiO_3$

D. $MgCl_2 \cdot 5MgO \cdot xH_2O$

Answer: d

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54. Formula of plaster of Paris is

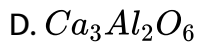
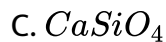
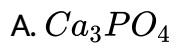


Answer: b



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55. Which of the following is not contained by Portland cement?



Answer: a



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56. The mixture of $MgCl_2$ and MgO is called _____.

- A. double salt
- B. Portland cement
- C. Sorel cement
- D. None of these

Answer: c



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57. Which of the following statements is correct?

- A. Plaster of Paris can be obtained by hydration of gypsum

- B. Gypsum is obtained by heating plaster of Paris
- C. Plaster of Paris is obtained from gypsum by oxidation
- D. Plaster of Paris contains higher percentage of calcium than gypsum.

Answer: d

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58. Except lime, a major constituent of Portland cement is

- A. silica
- B. alumina
- C. iron oxide
- D. magnesium

Answer: a

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59. Bleaching powder is prepared by passing chlorine into

- A. dry CaO
- B. moist slaked lime
- C. concentrated solution of $Ca(OH)_2$
- D. dilute solution of $Cu(OH)_2$

Answer: c

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60. Which of the following ions is/are responsible for biological functions such as maintenance of ion balance and nerve impulse conduction?

- A. Na^+

B. K^+

C. Mg^{2+}

D. All of these

Answer: d

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Bitsat Archives

1. Salt $A + S \rightarrow B \xrightarrow{BaCl_2}$ White precipitate A is paramagnetic in nature and contains about 55% K. Thus, A is

A. K_2O

B. K_2O_2

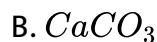
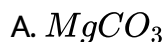
C. KO_2

D. K_2SO_4

Answer: c

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2. The decomposition temperature is maximum for



Answer: c

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3. When the same amount of zinc is treated separately with excess of sulphuric acid and excess of sodium hydroxide, the ratio of volume of

hydrogen evolved is

A. 1: 1

B. 1: 2

C. 2: 1

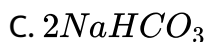
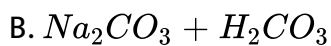
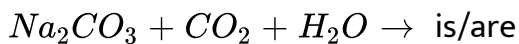
D. 2: 3

Answer: a



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4. the product(s) of the reaction,

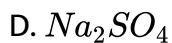
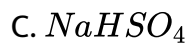
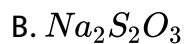
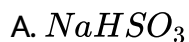


D. None of these

Answer: c

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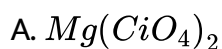
5. Sodium carbonate reacts with SO_2 in aqueous medium to give

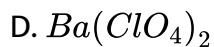
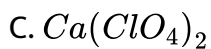
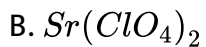


Answer: a

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6. Anhydrous, a drying agent is

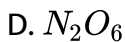
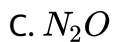




Answer: a

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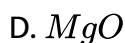
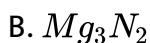
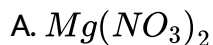
7. $Mg + NO_2$ on burning give



Answer: b

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8. A metal X on heating in nitrogen gas gives Y , Y on treatment with H_2O gives a colourless gas which when passed through $CuSO_4$ solution gives a blue colour. Y is:



Answer: b



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9. Which of the following statements are correct for alkali metal compounds?

I. Superoxides are paramagnetic in nature.

II. The basic strength of hydroxides increases down the group.

III. The conductivity of chlorides in their aqueous solutions decreases down the group.

IV. The basic nature of carbonates in aqueous solution is due to cationic hydrolysis.

A. I,II and III

B. I and II

C. II,III and IV

D. III and IV

Answer: b

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10. Setting of plaster of paris is

A. oxidation with atmospheric oxygen

B. combination with atmospheric CO_2

C. dehydration

D. hydration to yield another hydrate

Answer: d

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11. The ionic conductance is least for

A. Cs^+

B. Rb^+

C. K^+

D. Na^+

Answer: d

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12. The substance used as a fast drying agent in the laboratory is:

- A. Phosphorus pentoxide
- B. Active charcoal
- C. Anhydrous calcium chloride
- D. Na_2PO_4

Answer: c

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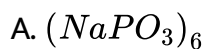
13. Which out of the following compounds is photographers fixer?

- A. Na_2SO_3
- B. $Na_2S_2O_3 \cdot 5H_2O$
- C. Na_2SO_2
- D. Na_2S

Answer: b

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14. Which of the following is called Bertheiot's salt?



Answer: c

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15. Milk of magnesia is used as

A. antichlor

B. antacid

C. antiseptic

D. food preservative

Answer: b

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16. Solvay process is used for the manufacturing of

A. NaOH

B. Na_2CO_3

C. NH_3

D. $NaCl$

Answer: b

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