



CHEMISTRY

BOOKS - SAI CHEMISTRY (TELUGU ENGLISH)

S-BLOCK ELEMENTS

Mcq

1. Assertion (A): Alkali metals are soft and have low Melting and boiling points.

Reason (R): This is because interatomic bonds are weak.

- A. Both (A) and (R) are not true
- B. (A) is true but (R) is not correct explanation of (A)
- C. (A) is not true but (R) is true
- D. Both (A) and (R) are true and (R) is correct explanation of (A)

Answer: (a)

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2. White metal is an alloy of

A. Na, Mg

B. Na, Pb

C. Li, Mg

D. Li, Pb

Answer: (d)

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3. In photoelectric effect, if the energy required to overcome the attractive forces on the electron (work functions) of Li, Na and Rb are 2.41

eV, 2.30 eV and 2.09 eV respectively, the work function of 'K' could approximately be in eV

A. 2.52

B. 2.2

C. 2.35

D. 2.01

Answer: (b)



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4. Ni anode is used in the electrolytic extraction of

A. Al

B. Mg

C. Na by Down' process

D. Na by Castner's process

Answer: (d)

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5. Which of the following is not correct?

- A. LiOH is a weaker base than NaOH
- B. Salts of Be undergo hydrolysis
- C. $Ca(HCO_3)_2$, is soluble in water
- D. Hydrolysis of beryllium carbide gives acetylene.

Answer: (d)

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6. In which of the following reactions hydrogen is not liberated?

- A. Reaction of fused NaOH with C

B. Reaction of NaOH with sulphur

C. Heating concentrated NaOH with Si

D. Reaction of zinc with NaOH

Answer: (b)

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7. Solvay process is used in the manufacture of

A. K_2CO_3

B. $KHCO_3$

C. Na_2CO_3

D. $CaCl_2$

Answer: (c)

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8. Ascertain (A): K, Rb and Cs form superoxides.

Reason (R) : The stability of the superoxides increases from 'K' to 'Cs' due to decrease in lattice energy.

The correct answer is

- A. Both (A) and (R) are true and (R) is the correct explanation of (A)
- B. Both (A) and (R) are true but (R) is not the correct explanation of (A)
- C. (A) is true but (R) is not true
- D. (A) is not true but (R) is true

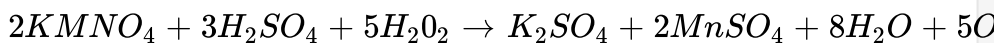
Answer: (c)



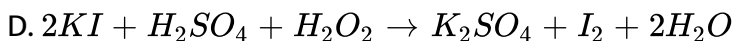
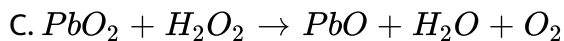
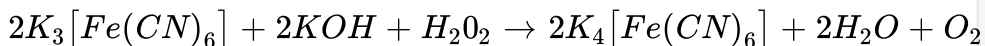
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9. Which one of the following reactions represents the oxidising property of H_2O_2 ?

A.



B.



Answer: (d)



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

(i) Superoxides are paramagnetic in nature.

(ii) The basic strengths of hydroxides increase down the group.

(iii) The conductivity of chlorides in their aqueous solutions decreases down the group.

(iv) The basic nature of carbonates in aqueous solutions is due to cationic hydrolysis.

A.) (i), (ii) and (iii) only

B. (i) and (ii) only

C. (ii), (iii) and (iv) only

D. (ii) and (iv) only

Answer: (b)



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11. Assertion (A): NaCl is less soluble in heavy water than in ordinary water.

Reason (R): Dielectric constant of ordinary water is more than that of heavy water.

A. Both (A) and (R) are true and (R) is the correct explanation of (A)

B. Both (A) and (R) are true and (R) is not the correct explanation of

(A)

C. (A) is true, but (R) is not true

D. (A) is not true, but (R) is true

Answer: (a)

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12. What are the metal ions present in carnallite?

A. Mg,K

B. Al,Na

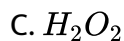
C. Na,Mg

D. Zn,Mg

Answer: (a)

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13. Sodium is heated in air at 300°C to form X, X absorbs CO_2 and forms Na_2CO_3 and Y. Which of the following is Y.

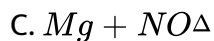
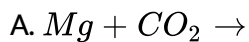


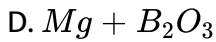
Answer: (b)



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14. In which of the following reactions, MgO is not formed?



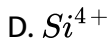
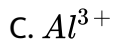
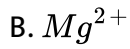


Answer: (b)



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15. Exhausted permutit does not contain _____ ion.

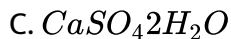
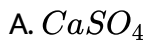


Answer: (a)



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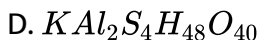
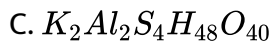
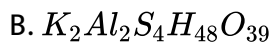
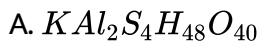
16. In the hardening stage of plaster of paris, the compound formed is,



Answer: (d)

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17. The molecular formula of potash alum is,



Answer: (c)

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18. In the extraction of sodium by Down's process cathode and anode are respectively.

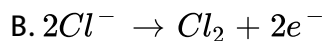
- A. Copper and nickel
- B. Copper and chromium
- C. Nickel and chromium
- D. Iron and graphite

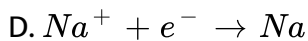
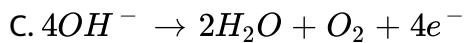
Answer: (d)



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19. Which one of the following reactions occur at the anode in tie Castner process of extracting sodium metal?

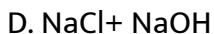
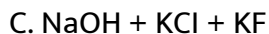
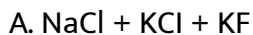




Answer: (c)

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20. Which one of the following electrolytes is used in Down's process of extracting sodium metal?



Answer: (a)

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21. During the electrolysis of cryolite, aluminium and fluorine are formed in _____ molar ratio.

A. 1 : 2

B. 2 : 3

C. 1 : 1

D. 1 : 3

Answer: (b)



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22. A mixture of sodium oxide and calcium oxide is dissolved in water and saturated with excess carbon dioxide gas. The resulting solution is _____, it contains _____

A. Basic, NaOH and $\text{Ca}(\text{OH})_2$

B. Neutral, Na_2CO_3 and CaCO_3

C. Basic, Na_2CO_3 and $CaCO_3$

D. Acidic, $NaOH$ and $CaCO_3$

Answer: (c)

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23. What are the products formed, when an aqueous solution of magnesium bicarbonate is boiled?

A. MgO , H_2O , CO_2

B. $Mg(HCO_3)$, H_2O

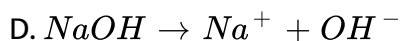
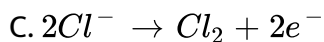
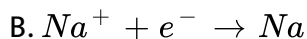
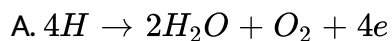
C. $Mg(OH)_2$, H_2O

D. Mg , H_2O , CO_2

Answer: (a)

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24. What is the reaction occurring at the anode in Down's process for the extraction of sodium?

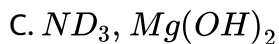


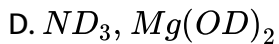
Answer: (c)



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25. The products formed when heavy water is reacted with magnesium nitride, are,

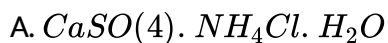




Answer: (d)

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26. The compound formed, when gypsum is dissolved in aqueous ammonium sulphate solution is,



Answer: (c)

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27. Which process is used for the removal of hardness of water?

- A. Calgon
- B. Baeyer
- C. Serpeck
- D. Hooper

Answer: (a)



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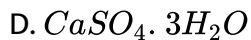
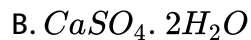
28. In organic reactions, sodium in liquid ammonia is used as

- A. Reducing agent
- B. Hydrating agent
- C. Oxidising agent
- D. Precipitating agent

Answer: (a)

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29. What is the molecular formula of gypsum?



Answer: (b)

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30. In the Castner's process of extraction of sodium, cathode is

A. Iron rod

- B. Nickel rod
- C. Copper rod
- D. Graphite rod

Answer: (a)

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31. Aqueous solution of carnallite gives positive test for

- A. Chloride ions only
- B. Potassium ions only
- C. Potassium and chloride ions only
- D. Potassium, magnesium and chloride ions

Answer: (d)

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32. What is the oxidation state of Fe in the product formed when acidified potassium ferrocyanide is treated with H_2O_2 ?

A. 2

B. 3

C. 6

D. 4

Answer: (b)



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33. A burning strip of Mg is introduced into a jar containing a gas. After sometime, the walls of the container are coated with carbon. The gas in the container is,

A. O_2

B. N_2

C. CO_2

D. H_2O

Answer: (c)



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34. Which of the following is oxide mineral

A. Zinc blende

B. Magnetite

C. Dolomite

D. Carnallite

Answer: (b)



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35. At what temperature, the density of heavy water will be maximum?

A. $0^{\circ}C$

B. $11.6^{\circ}C$

C. $4^{\circ}C$

D. $27^{\circ}C$

Answer: (b)



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36. Which of the following raw materials is used in the manufacture of

Na_2CO_3 by Solvay process?

A. $Ca(OH)_2, NH_3, CO_2$

B. $Ca(Cl)_2, NH_3, CO_2$

C. $NaOH, NH_3, CO_2$

D. $NaCl, NH_3, CO_2$

Answer: (d)

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37. Mortar is a mixture of

- A. Plaster of Paris + Silica
- B. Slaked lime + Plaster of Paris + H_2O
- C. $CaCO_3$ + Silica + H_2O
- D. Cement + Silica + H_2O

Answer: (d)

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38. Which of the following does not participate in the Solvay's process for the manufacture of Na_2CO_3 ?

A. NH_3

B. NaCl solution

C. CO_2

D. H_2SO_4

Answer: (d)



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39. Which one of the following is reduced by hydrogen peroxide in acid medium?

A. Potassium permanganate

B. Potassium iodide

C. $FeSO_4$

D. Potassium ferrocyanide

Answer: (a)

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40. Which one of the following compounds in aqueous solution gives a white precipitate with perchloric acid?

A. NaCl

B. KCl

C. $MgCl_2$

D. $FeCl_3$

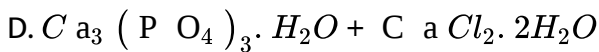
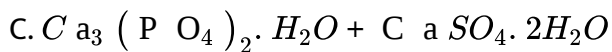
Answer: (b)

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41. Super phosphate is a mixture of

A. $Ca(H_2PO_4)_2 \cdot H_2O + CaCl_2 \cdot 2H_2O$

B. $Ca(H_2PO_4)_2 \cdot H_2O + 2CaSO_4 \cdot 2H_2O$



Answer: (b)

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42. Sodium amalgam is useful as,

A. Oxidising agent

B. Catalyst

C. Reducing agent

D. Bleaching agent

Answer: (c)

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43. The oxidation state of sodium in sodium amalgam is

- A. 1
- B. -1
- C. Zero
- D. 2

Answer: (c)



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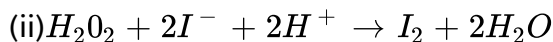
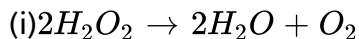
44. The alum used for purifying water is

- A. Ammonium alum
- B. Chrom alum
- C. Ferric alum
- D. Potash alum

Answer: (d)

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45. In the following two reactions,



H_2O_2 acts as

- A. An oxidising agent
- B. A reducing agent
- C. Both oxidising agent and reducing agent respectively
- D. Both reducing agent and oxidising agent respectively

Answer: (a)

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46. Beryllium shows diagonal relationship with aluminium. Which one of the following similarity is not correct?

- A. Be_2C like Al_4Cl_3 yields methane on hydrolysis
- B. Be like Al is rendered passive by HNO_3
- C. $Be(OH)_2$ like $Al(OH)_3$ is strongly basic
- D. Be forms beryllates and Al forms aluminates

Answer: (c)

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47. The compound formed during the setting of the plaster of paris is,

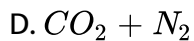
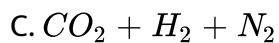
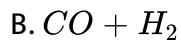
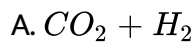
- A. Cement
- B. Gypsum
- C. Anhydrite
- D. Mortar

Answer: (b)



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48. Water gas is essentially a mixture of

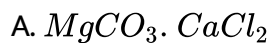


Answer: (b)



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49. The formula of dolomite is



B. $MgCO_3 \cdot CaCO_3$

C. $MgCO_3 \cdot CaSO_4$

D. $MgCl_2 \cdot CaCO_3$

Answer: (b)

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50. Permanent hardness of water is due to

A. Chlorides of Ca and Mg

B. Sulphates of Ca and Mg

C. Chlorides and sulphates of Ca and Mg

D. Bicarbonates of Ca and Mg

Answer: (c)

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51. In aqueous solutions, H_2O_2 oxidises H_2S to

- A. Sulphur
- B. Sulphuric acid
- C. Sulphurous acid
- D. Marshall's acid

Answer: (a)



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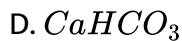
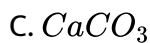
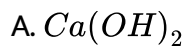
52. The reaction of I, with $Na_2S_2O_3$ gives NaI and

- A. SO_3
- B. $Na_2S_2O_6$
- C. $Na_2S_4O_6$
- D. Na_2SO_4

Answer: (c)

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53. Quicklime is represented by the formula



Answer: (b)

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54. The reaction of magnesium boride (Mg_3B_2) with acid solution produces

A. Boron

B. Boranes

C. Carboranes

D. Magnesium chloride

Answer: (b)



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55. Temporary hardness of water is due to the presence of of _ _ _ _ _ calcium and magnesium in water.

A. Chlorides

B. Sulphates

C. Bicarbonates

D. Phosphates

Answer: (c)

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56. Glass is soluble in a solution of

- A. Hydrochloric acid
- B.) Hydrofluoric acid
- C. Sulphuric acid
- D. Nitric acid

Answer: (b)

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57. The deep colour produced when iodine is dissolved in a solution of potassium iodide is caused by the presence of

- A. I_2
- B. KI

C. I_2

D. I_3

Answer: (d)



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58. Hydrogen gas may be readily prepared in the laboratory by reacting water with

A. Silver

B. Copper

C. Sodium

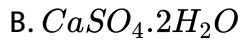
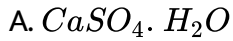
D. Barium peroxide

Answer: (c)



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59. The chemical formula of plaster of paris is,



Answer: (d)



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60. The mole fraction of solute in 20% aqueous H_2O_2 solution is

A. 0.588

B. 0.444

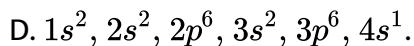
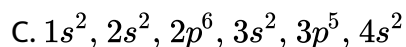
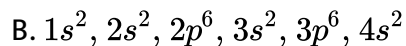
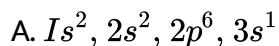
C. 0.1168

D. 4.44

Answer: (c)

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61. The correct electronic configuration of potassium is,



Answer: (d)

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62. Mg is mainly extracted from

A. Magnesite

B. Rutile

C. Diaspore

D. Cryolite

Answer: (a)



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63. The reagent that has action on glass is

A. Aqua regia

B. Hydrofluoric acid

C. Oleum

D. Fuming HNO_3

Answer: (b)



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64. The process of slow cooling of glass is called

- A. Annealing
- B. Hardening
- C. Tempering
- D. None of these

Answer: (a)



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