CHEMISTRY

BOOKS - NTA MOCK TESTS

THE S-BLOCK ELEMENTS TEST

Multiple Choice Question

1. In curring cement plasters water is sprinkled from time to time This helps in

A. keep it cool

B. developing interlocking needle-like crystals of hydrated silicates

C. hydrating snad and gravel mixed with cement

D. converting sand into silicic acid

Answer: B

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2. KO_2 (potassium super xoide) is used in oxygen cylinders in space and submarines because it.

A. Eliminates nitrogen

B. Produce moisture

C. Absorbs CO_2

D. Produce ozone

Answer: C

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3. The compound A on heating gives a colourless gas and a residue that is dissolved in water to obtain B. Excess of CO_2 is bubbled through aqueous solution of B, C is formed which is recovered in the solid form. Solid Con gentle heating gives back A. The compound is

A. $CaCO_3$

B. Na_2CO_3

C. K_2CO_3

D. $CaSO_4.2H_2O$

Answer: A

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4. CO_2 cannot be obtained by heating :

A. Na_2CO_3

B. $BeCO_3$

C. Li_2CO_3

D. $Ca(HCO_3)_2$

Answer: A

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5. $A \xrightarrow{\Delta} B + C \uparrow$

Both A and B releases same gas D and forms Na_2ZnO_2, when they are treated with zinc metal in the presence sodium hydroxide. Identify the incorrect statement for the above reactions.

A. D given white dense fumes with concentrated HCl.

B. C is paramagnetic .

C. The reaction $A \xrightarrow{\Delta} B + C$ is not a redox reaction.

D. D is used to make fertilizers.

Answer: C

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6. CO_2 gas along with solid (Y) is obtained when sodium salt (X) is heated. (X) is again obtained when

CO_2 gas is passed into aqueous solution of (Y). (X) and (Y) are

A. Na_2CO_3, Na_2O

B. $Na_2CO_3, NaOH$

C. $NaHCO_3, Na_2CO_3$

D. $Na_2CO_3, NaHCO_3$

Answer: C

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7. Which of the following compounds is consumed diring the prepartion of Na_2CO_3 by Solvay's process

?

A. $NH_3 + CaCO_3 + NaCl$

B. $NaCl + NH_4Cl + CaCO_3$

C. $N_2 + CaO + NaCl$

D. $CaCO_3 + NaCl$

Answer: A

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8. Plaster of Paris on making a paster with a little water sets into a hard mass due to the formation of

A. $CaSO_4$

B. $CaSO_4.\ H_2O$

C. $CaSO_4.\ 2H_2O$

D. None of these

Answer: C

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9. Calcium is obtained by

A. Electrolysis of molten $CaCl_2$

B. Electrolysis of solution of $CaCl_2$ in water

C. Reduction of $CaCl_2$ with carbon

D. Roasting of lime stone

Answer: A

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10. Pick out the statement (s) which is/are not true about the diagonal relationship of Li and Mg.

(i) Polarising powers of

Li^+ and Mg^{2+} are almost the same .

(ii) Like Li, Mg decomposes water very fast.

(iii) Both LiCl and $MgCl_2$ are deliquescent.

(iv) Like Li, Mg does not form solid bicarbonates.

A. (i) and (ii)

B. (ii) and (iii)

C. Only (ii)

D. Only (i)

Answer: C

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11. The element that gives a peroxide on burning with air is

A. lithium

B. sodium

C. rabidium

D. caesium

Answer: B

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12. The order of increasing density is

A. $Li < K < Na < Rb < Cs$

B. $Li < Na < K < Rb < Cs$

C. $Cs < Rb < K < Na < Li$

D. $K < li < Na < Rb < Cs$

Answer: A

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13. The molecular formula of Glauber's salt is

A. $MgSO_4 . 7H_2O$

B. $CuSO_4 . 5H_2O$

C. $FeSO_4 . 7H_2O$

D. $Na_2SO_4 . 10H_2O$

Answer: D

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14. When Na reacts with liquid NH_3, the substance formed is

A. $\left[Na(NH_3)_{\times}\right]^-$

B. $\left[e(NH_3)_y\right]^-$

C. $NaNH_2$

D. $Na_x(NH_3)_y$

Answer: B

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15. Which one of the following on hydrolysis gives the corresponding metallic hydroxide, H_2O_2 and O_2 ?

A. Li_2O

B. Na_2O_2

C. NaO_2

D. Na_2O

Answer: B

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16. $CaC_2 + N_2 \rightarrow A,$ product A is

A. $CaCN_2$

B. $CaCN_2$ and C

C. $CaCN_2 + N_2$

D. None of these

Answer: B

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17. Which of the following reactions produces hydrogen ?

A. $H_2S_2O_8 + H_2O$

B. $BaO + HCl$

C. $Ca + H_2O$

D. $Na_2O_2 + 2HCl$

Answer: C

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18. The correct order of thermal stability of hydroxide is

A.

$$Mg(OH)_2 < Sr(OH)_2 < Ca(OH)_2 < Ba(OH)_2$$

B.

$$Mg(OH)_2 < Ca(OH)_2 < Sr(OH)_2 < Ba(OH)_2$$

C.

$$Ba(OH)_2 < Sr(OH)_2 < Ca(OH)_2 < Mg(OH)_2$$

D.

$$Ba(OH)_2 < Ca(OH)_2 < Sr(OH)_2 < Mg(OH)_2$$

Answer: B

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19. In polymeric $(BeCl_2)_n$, there are

A. three-centre four-electron bonds.

B. three-centre three-electron bonds.

C. two-centre three-electron bonds.

D. three-centre two-electron bonds.

Answer: A

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20. Metal carbides on reaction with H_2O from CH_4.

Carbide can be

A. CaC_2

B. Mg_3C_2

C. Be_2C

D. All of these

Answer: C

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21. Nitrogen dioxide cannot be preapared by heating.

A. KNO_3

B. $Pb(NO_3)_2$

C. $Cu(NO_3)_2$

D. $AgNO_3$

Answer: A

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22. Which of the following is the strongest reducing agent in aqueous solution ?

A. Na

B. Li

C. K

D. Cs.

Answer: B

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

A. $Mg + CO_2 \rightarrow$

B. $Mg +$ dilute $HNO_3 \rightarrow$

C. $Mg + NO \xrightarrow{\Delta}$

D. $Mg + B_2O_3 \rightarrow$

Answer: B

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24. An aqueous solution of salt 'R' when treated with dil HCI, a colourless gas is given out. The gas so evolved when passed through acidified KMnO4 decolourises $KMnO_4$ solution. The salt 'R' is

A. Na_2CO_3

B. $NaClO_3$

C. $NaNO_2$

D. Na_2SO_3

Answer: D

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25. Which of the following ions will have the maximum hydration energy ?

A. Sr^{2+}

B. Ba^{2+}

C. Ca^{2+}

D. Mg^{2+}

Answer: D

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26. Which product is formed in the following reaction ?

$2KO_2 + S \xrightarrow{\text{Heat}}$ Product

A. Potassium sulphide

B. Potassium sulphate

C. Sulphur dioxide

D. Sulphur trioxide

Answer: B

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27. Thomas salg is

A. $CaSiO_3$.

B. $Ca_3(PO_4)_2$.

C. $MnSiO_3$.

D. $CaCO_3$.

Answer: B

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28. Barium burns in air to form

A. Ba_2O_2

B. Ba_2O

C. $Ba(OH)_2$

D. BaO

Answer: D

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29. An element having electronic configuration $1s^2 2s^2 2p^6 3s^2 3p^6 4s^1$ forms

A. acidic oxide.

B. basic oxide.

C. amphoteric oxide.

D. netural oxide.

Answer: B

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30. An excess of $Na_2S_2O_3$ react with aqueous $CuSO_4$ to give

A. CuS_2O_3

B. $Cu_2S_2O_3$

C. $Na\left[Cu(S_2O_3)_2\right]$

D. $Na_4\left[Cu_6(S_2O_3)_5\right]$

Answer: D

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