13. Which of the following is correct order of solubility in water ?

(A) $Li_2O > Cs_2O$ **(B)** LiF > CsF **(C)** Both of them **(D)** None of them

14. Which of the following has the least ionization potential ?

(A) Li **(B)** He **(C)** N **(D)** Be

15. The most abundant alkali metal in nature is :

(A) lithium **(B)** sodium **(C)** potassium **(D)** cesium

Date Planned : __ / __ / __	Daily Tutorial Sheet-2	Expected Duration : 30 Min
Actual Date of Attempt : __ / __ / __	Level-1	Exact Duration :_____

16. In which of the following reactions, H_2O_2 acts as a reducing agent ?

(A) $PbO_2(s) + H_2O_2(aq) \longrightarrow PbO(s) + H_2O(\ell) + O_2(g)$

(B) $Na_2SO_3(aq) + H_2O_2(aq) \longrightarrow Na_2SO_4(aq) + H_2O(\ell)$

(C) $2KI(aq) + H_2O_2(aq) \longrightarrow 2KOH(aq) + I_2(s)$

(D) All the above

17. High purity (> 99.95%) dihydrogen is obtained by :

(A) Electrolysis of pure water

(B) Electrolysis of warm aqueous Barium hydroxide

(C) Action of Zn on NaOH

(D) Electrolysis of acidulated water

18. The reaction related to coal gasification :

(A) $CO + H_2O \xrightarrow{Fe_2O_3+Cr} CO_2 + H_2$ **(B)** $C + H_2O \xrightarrow[\text{Catalyst}]{673\,K} CO + H_2$

(C) $CH_4 + H_2O \xrightarrow{Ni} CO + 3H_2$ **(D)** $C_nH_{2n} + 2nH_2O \xrightarrow[Ni]{1270\,K} nCO + (3n)H_2$

19. The correct statement regarding structure of ice :

(A) Ice has a highly ordered three dimensional hydrogen bonded structure.

(B) Each oxygen atom in ice is surrounded tetrahedrally by four other oxygen atoms at a distance of 276 pm.

(C) Hydrogen bonding gives ice a rather open structure with wide holes. These holes can hold some other molecules of appropriate size interstitially.

(D) All are correct

20. On heating hydrated magnesium chloride in presence of $SOCl_2$ ..... is evolved.

(A) CO_2 **(B)** CO **(C)** SO_2 **(D)** No gas

21. Which of the following represents correct order of decreasing E°_{ox} or reducing nature?

(A) Li > Na > K > Rb **(B)** Rb > K > Na > Li

(C) Rb > Li > Na > K **(D)** Li > Rb > K > Na

22. Alkali metals are characterized by :

(A) good conductors of heat and electricity **(B)** high melting points

(C) low oxidation potentials **(D)** high ionization potentials

***23.** Which of the following can be used as bleaching agent :

(A) $CaOCl_2$ **(B)** Na_2O_2 **(C)** NaOH **(D)** KO_2

24. Calcium hydride on hydrolysis forms :

(A) $CaO + H_2$ **(B)** $Ca(OH)_2$ only **(C)** $Ca(OH)_2 + H_2$ **(D)** Only CaO

25. Alkali metals are powerful reducing agents because :

(A) these are metals **(B)** there are monovalent

(C) their ionic radii are large **(D)** their ionization potentials are low

26. Which of the following properties of lithium does not show diagonal relationship with magnesium?

(A) Formation of Li^+ ion **(B)** Formation of Li_3N

(C) Solubility of $LiHCO_3$ **(D)** Thermal decomposition of Li_2CO_3

27. An element having electronic configuration $1s^2, 2s^2 2p^6, 3s^2 3p^6, 4s^1$ will form :

(A) acidic oxide **(B)** basic oxide

(C) amphoteric oxide **(D)** neutral oxide

28. The products of electrolysis of concentrated common salt solution are :

(A) $Na + Cl_2$ **(B)** $H_2 + O_2$

(C) $NaOH + H_2 + Cl_2$ **(D)** $NaOH + Cl_2 + O_2$

29. Elements in the first column of the periodic table are called alkali metals. These metals have :

(A) A single valence electron

(B) One electron less than an inert gas configuration

(C) high melting points

(D) high ionization potentials

30. Potassium when heated strongly in oxygen, it forms :

(A) K_2O **(B)** KO_2 **(C)** K_2O_2 **(D)** KO_3