SECTION-A

I. Answer all the questions by selecting the most suitable alternative. (20 × 1M = 20M)

1) Which of the following alkali metal ion has low hydration enthalpy
   A) Li^+ B) Na^+ C) K^+ D) Rb^+
2) The oxidation state of **"K"** in KO_2
   A) +1 B) +2 C) +3 D) +4
3) Lithium nitrate on heating gives
A) Li_2O & NO B) Li_2O & NO_2 C) LiO & NO D) Li_2O & N_2O
4) As we go down the group ,the stability of Alkali metal carbonates
   A) Increases B) Decreases
   C) May be increases or decreases D) Not predicted
5) BeO(Beryllium oxide) is
   A) Acidic B) Basic C) Amphoteric D) Neutral
6) Generally as we go down the group from the Basic character of hydroxides of Alkali earth metals is
   A) Increases B) Decreases
   C) May be increases or decreases D) Not predicted
7) Anomalous behavior of Lithium is due to
   A) small size B) High polarizing power
   C) both A&B D) presence of vacant d-orbital
8) Which of the following is a radioactive alkaline earth metal
   A) Fr B) Rf C) Ra D) Rn
9) Which of the following readily form nitride .
   A) K B) Mg C) Ba D) Ca
10) Among the alkaline earth metals , the element forming predominantly covalent compound is
   A) Be B) Mg C) Ca D) Sr
11) The no.of groups present in p-block elements are
   A) 3 B) 4 C) 5 D) 6
12) The formula of Bauxite mineral is
   A) $Al_2O_3 .H_2O$ B) $Al_2O_3 .2H_2O$ C) $Al_2O_3 .3H_2O$ D) $Al_2O_3 .4H_2O$
13) The correct order of first ionization entahlpies of Group-13 Elements is
   A) B>Al>Ga>In>Tl B) B>Al<Ga>In>Tl
   C) B>Al<Ga>In<Tl D) B<Al<Ga<In<Tl

14) The most stable oxidation state of Thallium is

A) +1 B) +2 C) +3 D) +4

15) As we go down the group, the tendency of monomeric tri halidesof group 13 elements Lewis acid character is

A) increases B) decreases

C) may be increases or decreases D) not predicted

16) The inert pair effect is predominant in

A) Si B) Ge C) Sn D) Pb

17) In graphite, each carbon atom in hexagonal ring is undergoes ------hybridization

A) sp B) sp^2 C) sp^3 D) dsp^2

18) The valence of carbon is

A) 6 B) 5 C) 4 D) 3

19) Which of the following is non-benzonoid compound

A) benzene B) aniline C) napthalene D) Tropolone

20) In three dimensional representation of organic molecule ,dashed wedge represents

A) bond towards observer B) bond away from the observer

C) bond lying in plane D) none of the above

SECTION –B

Answer any two of the following questions (2×5M=10M)

1) Write a note on Fullerenes 5M
2) a) Write a short note on the reactivity of alkali metals towards air. 2M
   b) When an alkali metal dissolves in liquid ammonia, the solution can acquire different colors. Explain the reasons for this type of color change . 3M
3) Define the following 5M
   a) Oxoacids
   b) Inert pair effect
   c) Catenation
   d) Heterocyclic compounds
   e) Lewis acid
4) For each of the following compounds write a bond line formula and find out no.of sigma and phi bonds. 5M
   a) $HOCH_2CH_2CH_2CH(CH_3)CH(CH_3)CH_3$
   b) $CH_3CH_2CH_2C(CH_3)_2CH_2CHO$
   c) $C(CH_3)_4$
   d) $CH_3CHBrCH_2CH_2CH_2COOH$
   e) CH3CH2CH2CH2COCH3