CHEMISTRY MODEL PAPER

JUNIOR INTER

Time-3hours   **Max.Marks:60**

SECTION-A

NOTE: Answer all questions.   *10×2=20M*

1. calculate the oxidation state of i)cr in K_2CrO_4 and ii) N in NH_4NO_3.

2. What is Boltzmann constant?Give its value.

3. what is the nature of aqueous solution of Na_2CO_3 ?why?

4. write the average composition of Portland cement.

5. What is meant by inert pair effect? Give the stable oxidation state of Thallium.

6. what do you mean by autoprotolysis?Give the equation to represent the autoprotolysis of water.

7. Calculate the Enthalpy change for the complete combustion of 29gm of Butane if

$$C_4H_{10}(g) + \frac{13}{2}O_2(g) \rightarrow 4CO_2(g) + 5H_2O(l), \Delta H = -2658KJ$$

8. Define the terms 'Eutrophication' and 'Bioamplification'.

9. what is Global warming? name any two green house gases.

10. How is Ethylene is prepared from ethylalcohol? give equation.

SECTION-B

NOTE: ANSWER any Six of the following   *6×4m=24m*

11. Deduce a)Boyle's law and b)Dalton's law from kinetic gas equation.

12. Balance the following equation by Ion electron method

$$P_4 + OH^- \longrightarrow PH_3 + H_2PO_2^-$$

13. Define and explain the following with one exampleeach

 i) Standard enthalpy of formation   ii)Enthalpy of combustion.

14. write a note on Heavy water.

15. Explain the differences in properties of diamond and graphite on the basis of their structures.

16. State Le -Chatelier principle. Discuss the favourable conditions for the Haber's ammonia synthesis by applying Le -Chatelier principle.

17. How does acetylene reacts with the following

       a)Acetic acid   b)Water

       c)Hydrogen halide   d)Ammonical $AgNO_3$ solution.

18. Name the products A,B and C in the following sequence of reactions.

$$CaC_2 \xrightarrow{water} A \xrightarrow{Fe,500^o c} B \xrightarrow{CH_3Cl+AlCl_3} C$$
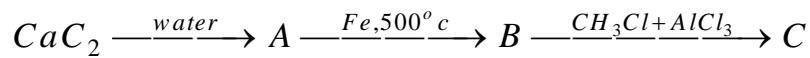
SECTION-C

NOTE: answer any two questions   *2X8=16M*

19. What are the main Postulates of Bohr's theory of hydrogen atom? Discuss the importance of this model to explain various series of line spectra in hydrogen atom.

20. What are the basic postulates of VSEPR theory? Discuss the shape of Methane and Ammonia molecules on the basis of VSEPR theory.

21. Define first and second ionization potentials. Why is the second ionization potential greater than the first ionization potential? Discuss anythree factors affecting IP values of elements