

CHEMISTRY

FIRST YEAR HIGHER SECONDARY EXAMINATION

TIME: 2 HOURS

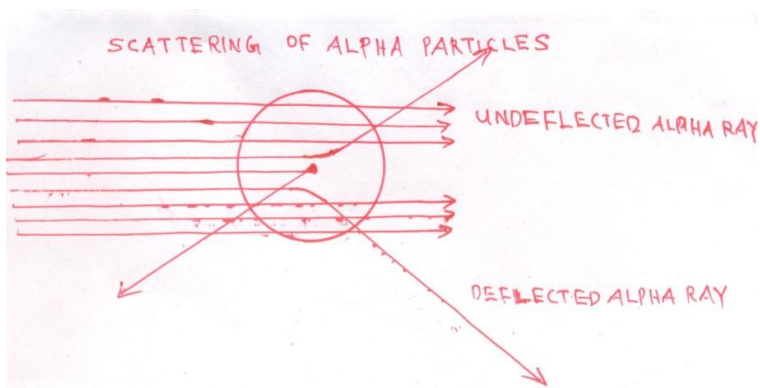
COOL OFF TIME :15 MINUTES

MAX.SCORE :60

1. 14 g . N_2 reacts with 6 g. H_2 to form ammonia

- (a) Identify the limiting reagent. (1)
(b) Calculate the amount of reagent which remains unreacted. (1)
(c) Calculate the amount of ammonia produced. (1)

2.



- (a) Name the scientist who conducted the above experiment (1)
(b) What are his conclusions. (2)
(c) Give any two of demerits of atomic structure deduced from the above experiment (1)

3.(a) what do you mean by iso-electronic species ? (1)

(b) Identify the iso-electronic species among the following .(2)

4. Complete the following table (4)

SL: NO:	Molecule	Hybridisation	Geometry
1	Ethane	-----	-----
2	PCl_5	-----	-----
3	SF_6	-----	-----
4	-----	sp	-----

5. A mixture of ammonia & Hydrogen chloride does not obey Dalton's law of partial pressures.

(a) Give reason (1)

(b) State the law (1)

(c) Which postulate in Kinetic molecular Theory supports the law? (1)

6. Entropy of universe increases during every natural processes.

(a) What do you mean by entropy (1)

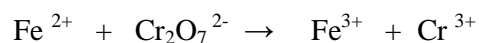
(B) Give the sign of entropy change with reason for the following processes.

(i) $\text{H}_2\text{O}_{(l)} \rightarrow \text{H}_2\text{O}_{(v)}$

(ii) Crystallization of glucose from its aqueous solution

(iii) $\text{H}_{2(1\text{ atm})} \rightarrow \text{H}_{2(10\text{ atm})}$ (3)

7. (a) Balance the following redox reaction occurring in acid medium. Use ion electron method or half reaction method. (3)



(b) Predict the oxidation state of underlined element in the following

(a) K_2MnO_4 (b) H_2SO_4 (1)

8. Give the conjugate acids of the following

(a) HSO_4^- (b) H_2O (1)

(b) What do you mean by ionic product of water? Give its value at 25°C . (2)

(c) What are buffer solutions? (1)

9. Classify the following into metallic and covalent hydrides.

CH_4 , LiH , CaH_2 , C_2H_2 (2)

10. What is the specialty of heavy water? Give its use. (2)

11. Li is the diagonal pair of magnesium. Support this statement with two points. (2)

12. Match column A with B (2)

Na_2CO_3	Quick lime
NaHCO_3	Slaked lime
CaO	Soda ash
Ca(OH)_2	Baking soda

13. When a compound X is heated strongly it swells up to a transparent liquid which solidifies to glassy beads.

(a) Identify compound X (1)

(b) Write balanced equations for the above reaction (2)

(c) Write the molecular formula of borazine and give its method of preparation. (2)

14. Lassaignes test is conducted for the detection of N, S & halogens .

(a) How is Lassaigne's solution prepared?. (2)

(b) Write the test for the detection of chlorine in organic compound (2)

15. Give the IUPAC names of the following. (2)

(a) $\text{CH}_3\text{-CH(CH}_3\text{)CH(CH}_3\text{)CH}_3$ (b) $\text{CH}_3\text{-CH(Cl)CH(Br)CH}_3$

Suggest suitable methods for the separation following mixtures (2)

(a) Aniline & water

(b) Acetic acid & phenol

16.(a) Give the structures of cis & trans isomers of but-2-ene (1)

(b) $\text{CH}_2 = \text{CH-CH}_3 + \text{HBr} \rightarrow \text{-----}$

Predict the major product of the above reaction & state the rule behind it. (3)

(c) Give the names of the following reactions. (2)

(i) Alkyl halide is treated with metallic sodium in dry ether medium to get higher alkanes.

(ii) Benzene is treated with acetyl chloride in presence of anhydrous AlCl_3 to get acetophenone.

17.(a) Name any two green house gases (1)

(b) Statues & monuments in India are affected by air pollution .Explain.(2)

Prepared By

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