

STD: XI

CHEMISTRY

General instructions:

- All questions are compulsory.
- Q.No 1 to 5 are very short answers and carries 1 mark each.
- Q.No 6 to 10 are short answers and carries 2 mark each.
- Q.No 11 to 22 are also short answers and carry 3 mark each.
- Q.No 23 is value based question and carry 4 marks.
- Q.No 24 to 26 are long answer questions and carry 5 marks each
- Use log tables if necessary, use of calculator is not allowed.

SECTION - A

- Alkali metals do not form dipositive ions. Why?
- State Avogadro's law.
- Select Lewis acid and base from the following :
 H_2O , Cu^{2+} , BF_3 , OH^-
- What is the oxidation state of K in KO_2 ?
- Write the structural formula of the following compound:
3- ethyl - 5, 5 - dimethylheptane.

SECTION - B

- Calculate the molarity of NaOH in the solution prepared by dissolving its 8 gm in enough water to form 500 ml of the solution.
- Explain the resonance in O_3 molecule
- Name of the following:



- Write any four points of similarities between Li and Mg.
- What are Electrophiles and Nucleophiles? Give examples.

SECTION - C

- What is the simplest empirical formula of a compound which has the following composition by mass:
Carbon - 52.17%
Hydrogen - 13.04%
Oxygen - 34.78%
[The relative atomic mass of C = 12; H = 1; O = 16]
- Calculate the mass of a photon with wavelength 3.6\AA
 - Write the electronic configuration of the ions:
 O^{2-} and Na^+ .
- Explain that for $n=3$, total number of subshells is 3 and number of orbitals is 9.
 - Write the notation of subshell for the following set of quantum numbers:
 $n=5, l=0$.
 - Write the 'l' and 'm' values for electrons present in "3d" orbitals.
- Elucidate the properties of Maxwell's electromagnetic waves.
- Justify the following statements:
 - Ionisation enthalpy increases from Li to F.
 - Ionisation enthalpy of Boron is slightly less than that of Beryllium.
 - Electronegativity decreases from Fluorine to Astatine.

(OR)

a) Write all the reactions involved in the preparation of Na_2CO_3 in solvay process.

b) Define the terms:

(i) Dead burnt plaster

(ii) Slaking of lime.

26. a) Explain in detail the following electron displacements taking place in organic compounds:

(i) Inductive effect

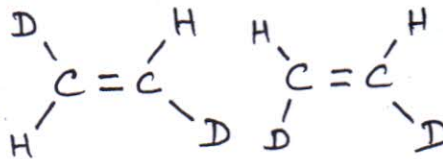
(ii) Electromeric effect.

b) Identify and define the relationship between the pairs:

(i)



(ii)



(OR)

a) Give the reactions involved in the estimation of sulphur and chlorine by Lassaigne's Test.

b) On adding AgNO_3 to CCl_4 solution, white precipitate of AgCl is not obtained. Give reason.

c) State the principle involved in the following techniques:

(i) Partition chromatography

(ii) Distillation under reduced pressure.

NOTE :- Q. No: 2, 17, 18, 24

NEED NOT BE ATTEMPTED.

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ALL THE BEST