PLUS ONE BOARD EXAM 2023

CHEMISTRY ANSWER KEY PART 1

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Qn No	Answer
1	220/44 = 5 moles
2	unnilquadrium.
3	F^-
4	3 hydroxypentanal
5	Staggered conformation
6	(i) Molarity (M) is defined as the number of moles of the solute dissolved in one Litre of the solution. It is expressed as: $\text{Molarity (M)} = \frac{\text{Moles of solute}}{\text{Volume of Solution in Litre}}$
	(ii) Law of Defenite proportion states that a given chemical compound always contains the same elements in the exact same proportions by mass. As an example, any sample of pure water contains 11.19% hydrogen and 88.81% oxygen by mass. It does not matter where the sample of water came from or how it was prepared. Its composition, like that of every other compound, is fixed.
7	De-Broglie relation relates a body's momentum with its wavelength. It is given as $\lambda=\frac{h}{p}$ where λ is its de-broglie wavelength h is the plank's constant p is the moving body's momentum.
8	(i) n value =3 s value=0
	(ii) (b) $1s^2\ 2s^2\ 2p_x^1\ 2p_y^1\ 2p_z^1$ as per Hunds Rule of Maximum Multiplicity
9	(i) The modern periodic law states that the physical and chemical properties of the elements are the periodic function of the atomic numbers and electronic configurations. The elements with the similar properties repeat after certain regular intervals. This repetition occurs if the arrangement of the elements is in order of their increasing atomic numbers.
	(ii) The atomic radius generally increases down a group. This is because, down a group, the principal quantum number (n) increases which results in an increase in the distance between the nucleus and valence electrons.
10	(i) Ionization enthalpy is defined as the minimum amount of energy that is required to remove the most loosely bounded electrons that

		is electron present in the outermost shell from an isolated gaseous atom.
	(ii)	Nitrogen has higher ionisation enthalpy than oxygen because by removing one electron from 2p - orbital oxygen acquires stable configuration, i.e.,2p3. On the other hand, in case of nitrogen it is not easy to remove one of the three 2p - electrons due to its stable configuration.