SSLC First Term Exam 2023
Answer Key
CHEMISTRY

No.	Answer Key
1	3
2	Number of molecules
3	21
4	Cu
5	Energy
6	a) Na b) Hydrogen
7	a) $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^5\ 4s^1$ b) Half-filled d-orbitals are generally more stable than fully filled or empty
8	a) 46 g b) $2 \times 6.022 \times 10^{23}$
9	a) s block b) 4th shell containing 4s sub shell has less energy than 3rd subshell
10	Statements b & c
11	a) $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^3$. b) 5 c) $1s^2\ 2s^2\ 2p^3$
12	a) B Zn is more reactive than Cu from their salt solution. b) Zn
13	a) The last electrons are filled up in the f subshell. b)1. Uranium (U), Thorium (Th), Plutonium(Pu) etc are used as fuels in nuclear reactors. 2. Thorium is utilized as a part of cancer treatment.
14	a) 400 L b) Charle' s Law b) When it is exposed to the sunlight temperature of gas inside the balloon increases according to charle's law. Volume also increases
15	a) 88 g b) 5 mole c) $5 \times 6.022 \times 10^{23}$
16	a) D b) A c) B d) C

17	a) 2
	b) 44.8 L
	c) $5 \times 6.022 \times 10^{23}$
18	a) + 2
	b) $1s^2 \, 2s^2 \, 2p^6 \, 3s^2 \, 3p^6 \, 3d^5$
	c) Transition elements have strong tendency to form complexes because of
	(i) Small size and high positive charge density.
	(ii) Presence of vacant (n-1)d orbitals which are of appropriate energy to accept lone pair and unshared pair of electrons from the ligands for bonding with them.
19	a) X = 20 L Y = 8 atm
	b) Boyle' s Law
	c)) Boyle' s Law states, At a constant temperature, volume of a definite mass of gas is inversely proportional to its pressure. If P is the pressure and V the volume, then $P \times V$ is a constant.
	d) The size of the air bubbles rising from the bottom of an aquarium increases.
20	a) X = 2
	Y =16
	b) X = 2
	Y = 2
	c) XY
	d) 12