THIRUVANANTHAPURAM EDUCATIONAL DISTRICT

CHEMISTRY

STANDARD X

Answer key

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1) 3 — 1

2) 3d — 1

3) 6.022×10^{23} — 1

4) f — 1

5) 22.4L — 1

6) a, c — 2

7) a A=2x B)15L — 1

b- Avogadro's law — 1

8) a. $1s^2 2s^2 2p^6 3s^2 3p^6 3d^5 4s^1$ or ii — 1

b) The half filled or full filled d sub shell is more stable than others. — 1

9) a) $2 \times 6.022 \times 10^{23}$ — 1

b) 56 g **1**

10) a) 44 g **1**

b) 5 **1**

11) a)$1s^2 2s^2 2p^6 3s^2 3p^6 4s^1$ **1**

b) group-1, period-4 **1**

c) Block-S **1**

12) a) FeO (Ferrous oxide) **1**

b) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^5$ **1**

c) Transition elements show variable oxidation state in their compounds because there is a very small energy difference in between3d and 4s orbitals. As a result, electrons of 3d orbitals as well as 4s-orbitals take part in bond formation. **1**

13) A=2 **1**

B=4x 6.022 X 10^{23} **1**

C=20g **1**

14) a) 40g **1**

b) 2 **1**

c) 2 x 6.022 x 10^{23} **1**

15) a) Figure b **1**

b) As the bubbles moves from bottom to top pressure is decreases so the volume of bubbles increases at the top.

The law related to this activity is boyles law **1**

c) The size of climate balloons increases as they move in upward direction in the atmosphere /

When an inflated balloon is immersed in water, its size decreases(Any other eg) **1**

16) a) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^5 4s^1$ **1**

b) A,C **1**

c) D **1**

d) CD_2 **1**

17) a) 20 L **1**

b) Charle's Law **1**

c) V∝ T or V = a constant X T or

V/T = a constant **1**

d) As the temperature increases in summer season,the volume of the air inside the tyre increases and finally it bursts **1**

18) a) 140g **1**

b) 10 x N_A **1**

c) 89.6 L or (67.2L) **1**

d) 3 **1**

19) a) 15 **1**

b) D **1**

c) Transition elements can show variable oxidation states or They form coloured compounds (any other) **1**

d) B **1**

20) **4**

A	B
s - Block	**The oxides and hydroxides of these elements are basic in nature.**
p - Block	**These elements are in the solid, liquid and gaseous states at room temperature.**
d - Block	**Compounds of these elements are used for giving colour to glasses and in oil paintings.**
f - Block	**These elements are used as fuels in nuclear reactors.**