પુ|જના International School
Shree Swaminarayan Gurukul, Zundal

PERIODIC ASSESSMENT I [2021-22]			
Student Name		**Grade**	**XII**
Date		**Subject**	**CHEMISTRY**
		Total Marks	**50**

General instructions:

- **All questions are compulsory**
- **Questions No. 1 -5 are very short answer questions and carry one mark each.**
- **Question No 6-11 are short answer question and carry 2 marks each.**
- **Question No 12-17 are also short answer question and carry 3 marks each.**
- **Question No 18-20 are long answer question and carry 5 marks each.**
- **Use of log tables if necessary. Calculators are not allowed.**

1. Give an example which shows both frenkel and Schottky defect. [1]
2. What is the difference between ferromagnetic and paramagnetic substances? [1]
3. State Raoult's Law. [1]
4. How is osmotic pressure of a solution related to its concentration? [1]
5. Give some uses of electrochemical cells? [1]
6. How many atoms are there in a unit cell of a metal crystallizing in a: (a) FCC structure (b) BCC structure [2]
7. Give the relationship between density and edge length of a cubic crystal. [2]
8. Define the following terms : (a) Molality (b) Molarity [2]
9. Calculate the volume of water which could be added to 20 ml of 0.65 m HCl to dilute the solution to 0.2 m? [2]
10. What are the factors on which conductivity of an electrolyte depend? [2]
11. The conductivity of an aqueous solution of NaCl in a cell is $92\Omega^{-1}\ cm^{-1}$ the resistance offered by this cell is $247.8\,\Omega$. Calculate the cell constant? [2]
12. Copper crystallises into a fcc lattice with edge length $3.61\times10^{-8}cm$. Show that the calculated density is in agreement with its measured value of 8.92 g cm^3. [3]
13. How are crystalline solids classified on the basis of nature of bonding? Explain with example[3]
14. Calculate the % composition in terms of mass of a solution obtained by mixing 300g of a 25% & 400 g of a 40% solution by mass? [3]
15. Obtain a relationship between relative lowering of vapour pressure and mole fraction of solute? [3]
16. How much electricity in terms of Faraday is required to produce

(i) 20.0 g of Ca from molten $CaCl_2$.

(ii) 40.0 g of Al from molten Al_2O_3. [3]

17. A solution of $Ni(NO_3)_2$ is electrolysed between platinum electrodes using a current of 5 amperes for 20 minutes. What mass of Ni is deposited at the cathode? [3]
18. Explain the following terms with suitable examples: [5]

(i) Schottky defect

(ii) Frenkel defect

(iii) Interstitials and

(iv) F-centres

19. Calculate the mass percentage of benzene (C_6H_6) and carbon tetrachloride (CCl_4) if 22 g of benzene is dissolved in 122 g of carbon tetrachloride. [5]
20. Explain how rusting of iron is envisaged as setting up of an electrochemical cell. [5]