पुɛɲना International School
Shree Swaminarayan Gurukul, Zundal

PERIODIC ASSESSMENT I [2021-22]			
Student Name		**Grade**	**XI**
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. Name the different methods that can be used for separation of components of a mixture. .
   [1]
2. What is the SI unit of density? [1]
3. What is an isotope? [1]
4. Define photoelectric effect. [1]
5. Stale the modern 'Periodic law'? [1]
6. 4 litres of water are added to 2L of 6 molar HCl solutions.What is the molarity of resulting solution? [2]
7. Give one example each of a molecule in which empirical formula and molecular formula are (i) same (ii) Different. [2]
8. What did Rutherford conclude from the observations of $\alpha - ray$ scattering experiment? [2]
9. Calculate the uncertainty in the momentum of an electron if it is confined to a linear region of length 1×10^{-10}. [2]
10. ive the general characteristics of the long form of Modern periodic table? [2]
11. Give the main features of d-block elements. [2]
12. Calculate the molecular mass of the following. [3]

   i. H2O
   ii. CO2
   iii. CH4

13. [3]

   In three moles of ethane C2H6, calculate the following:

   i. Number of moles of carbon atoms
   ii. Number of moles of hydrogen atoms
   iii. Number of molecules of ethane

14. Which experiment led to the discovery of electrons and how? [3]
15. Electromagnetic radiation of wavelength 242 nm is just sufficient to ionize the sodium atom. Calculate the ionization energy of sodium in kJ mol-1. [3]

16.   [3]

What do you understand by isoelectronic species? Name a species that will be isoelectronic with each of the following atoms or ions.

i.   F–
ii. Ar
iii. Mg2+
iv. Rb+

17. How would you explain the fact that the first ionization enthalpy of sodium is lower than that of magnesium but its second ionization enthalpy is higher than that of magnesium?   [3]
18.   Calculate the molarity of a solution of ethanol in water in which the mole fraction of ethanol is 0.040.   [5]
19. Write the electronic configuration of (i) Mn4+, (ii) Fe3+ (iii) Cr2+ and Zn2+ Mention the number of unpaired electrons in each case.   [5]
20. Assign the position of the element having outer electronic configuration in the periodic table.
                                                                                                      [5]

i.   ns2 np4 for n = 3
ii.   (n - 1)d2 ns2 for n = 4 and
iii. (n - 2)f7 (n - 1)d1 ns2 for n = 6