St. Mary's School, Dwarka
Holidays Homework
Class: XI
Subject: Chemistry
Week 2
Worksheet 2

Objective:
Ø Revision of concepts
Ø Application of the concepts to real life situations.
Ø Skills to carry out research work and develop scientific aptitude

Instructions:
*Neatly write all the answers in your science notebook.
*Attempt the questions keeping in mind the weightage of each question.
*Assignment 'Summer Holiday Homework' will be created on TEAMS. PDF of handwritten work should be uploaded on it.

Q1. What are derived units? Give an example. 1

Q2. Convert into meter :

(i) 7 nm (diameter of small virus)

(ii) 40 Em (thickness of Milky Way galaxy)

(iii) 1.4 Gm (diameter of sun)

(iv) 41 Pm (distance of nearest star). 2

Q3. Express the following in SI units using power of 10 notation :

(i) 1.35 mm (ii) 1 day (iii) 6.45 mL (iv) 48 μg 2

Q4. Calculate the molarity of the NaOH in the solution prepared by dissolving its 4 g in enough water to form 250 mL of the solution. (Na molar mass = 23 g/mol, O =16, H=1) 2

Q5. Give two points of difference between cathode rays and anode rays. 2

Q6. Define molarity and molality of a solution with their respective units.

In order to preserve a solution for a longer duration which concentration term will you prefer and why ? 3

Q7. Compare the characteristic properties of an electron, a proton and a neutron. 3

Q8. Commercially available concentrated hydrochloric acid contains 38% HCl by mass.

(a) What is the molarity of this solution ? The density is 1.19 g mL^{-1}.

(b) What volume of concentrated HCl is required to make 1.00L of 0.10 M HCl ? 3

Q9. (a) A sample of drinking water was found to be severely contaminated with chloroform ($CHCl_3$), supposed to be carcinogenic in nature. The level of contamination was 23 ppm (by mass).

(i) Express this in percent by mass

(ii) Determine the molality of chloroform in the water sample.

(b) The density of 2 molal solution of NH_4OH is 1.08 g/mL. Calculate the molarity of the solution. 3

Q10. (a) Carbon monoxide gas is more dangerous than carbon dioxide gas. Why?

(b) What would have happened if the greenhouse gases were totally missing in the earth's atmosphere ? Discuss.

(c) What is the advantage of using hydrogen peroxide as bleaching agent?

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