1. 9.8g of H_2SO_4 is present in 2 litres of a solution. The molarity of the solution is **[PMT 2002]**
(a) 0.1 M
(b) 0.05M
(c) 0.2 M
(d) 0.01M

2. The normality of M 3.0 phosphorus acid (H_3PO_3) is
(a) 0.1
(b) 0.9
(c) 0.3
(d) 0.6

3. The solution of sugar in water contains
(a) Free atoms
(b) Free ions
(c) Free molecules
(d) Free atom and molecules

4. When a solute is present in trace quantities the following expression is used
(a) Gram per million
(b) Milligram percent
(c) Microgram percent
(d) Parts per million

5. The normality of 2.3 M H_2SO_4 solution is
(a) 2.3 N
(b) 4.6 N
(c) 0.46 N
(d) 0.23 N

6. The molality of a solution is
(a) Number of moles of solute per ml 1000 of the solvent
(b) Number of moles of solute per gm 1000 of the solvent
(c) Number of moles of solute per ml 1000 of the solution
(d) Number of gram equivalents of solute per ml 1000 of the solution

7. Molar solution means 1 mole of solute present in [PMT 2003]
(a) 1000g of solvent
(b) 1 litre of solvent
(c) 1 litre of solution
(d) 1000g of solution

8. Which of the following modes of expressing concentration is independent of temperature **[PMT 1999; PMT 1992, 95; PMT 1992]**
(a) Molarity
(b) Molality
(c) Formality
(d) Normality

9. When $W_B$gm solute (molecular mass M_B) dissolves in W_A gm solvent. The molality M of the solution is
(a) $\dfrac{W_B}{W_A} \times \dfrac{M_B}{1000}$
(b) $\dfrac{W_B}{M_B} \times \dfrac{1000}{W_A}$
(c) $\dfrac{W_A}{W_B} \times \dfrac{1000}{M_B}$
(d) $\dfrac{W_A \times M_B}{W_B \times 1000}$

10. Conc. H_2SO_4 has a density of 1.98 gm/ml and is 98% H_2SO_4 by weight. Its normality is
(a) 2 N
(b) 19.8 N
(c) 39.6 N
(d) 98

11. The molality of 90% H_2SO_4 solution is [density=1.8 gm/ml] **[PMT 2004]**
(a) 1.8
(b) 48.4
(c) 9.18
(d) 94.6

12. 10 N and $\dfrac{1}{10}$ N solution is called
(a) Decinormal and decanormal solution
(b) Normal and decinormal solution
(c) Normal and decanormal solution
(d) Decanormal and decinormal solution

13. Which one of the following is an extensive property
(a) Molar volume
(b) Molarity
(c) Number of moles
(d) Mole fraction

14. The unit of molality is
(a) Mole per litre
(b) Mole per kilogram
(c) Per mole per litre
(d) Mole litre

15. The molarity of pure water is **[PMT 1974, 88, 90; PET 1999; PMT 1999]**
(a) 55.6
(b) 5.56
(c) 100
(d) 18

16. An X molal solution of a compound in benzene has mole fraction of solute equal to 0.2. The value of X is
(a) 14
(b) 3.2
(c) 4
(d) 2

17. The statement "If 0.003 moles of a gas are dissolved in 900 g of water under a pressure of 1 atmosphere, 0.006 moles will be dissolved under a pressure of 2 atmospheres", illustrates
(a) Dalton's law of partial pressure
(b) Graham's law
(c) Raoult's law
(d) Henry's law

18. Molarity is expressed as **[PMT 1991]**
(a) Gram/litre
(b) Moles/litre
(c) Litre/mole
(d) Moles/1000 gms

19. Which is correct about Henry's law
   (a) The gas in contact with the liquid should behave as an ideal gas
   (b) There should not be any chemical interaction between the gas and liquid
   (c) The pressure applied should be high
   (d) All of these

20. The solubility of a gas in water depends on **[PET 2002]**
   (a) Nature of the gas   (b) Temperature
   (c) Pressure of the gas   (d) All of the above