

25. The density of a DNA sample is 1.1g/ml and its molar mass determined by cryoscopic method was found to be 6×10^8 g/mole. What is the volume occupied by one DNA molecule? ($N_A = 6 \times 10^{23}$)
- 5.45×10^8 ml
 - 1.83×10^{-9} ml
 - 9.06×10^{-16} ml
 - 1.09×10^{-13} ml
26. How many atoms do mercury vapour molecules consist of if the density of mercury vapour relative to air is 6.92? The average mass of air is 29 g per mole. (Hg = 200)
- 1
 - 2
 - 4
 - Infinite
27. Vapour density of a volatile substance is 1.2 ($C_2H_6 = 1$). Its molecular mass would be
- 1.2
 - 2.4
 - 36
 - 72
28. A compound contains 7 carbon atoms, 2 oxygen atoms and 9.96×10^{-24} g of other elements. The molecular mass of compound is ($N_A = 6 \times 10^{23}$)
- 122
 - 116
 - 148
 - 154
29. If the mass of neutron is doubled and that of proton is halved, the molecular mass of H_2O containing only H^1 and O^{16} atoms, will
- increase by about 25%
 - decrease by about 25%
 - increase by about 14%
 - decrease by about 14%
30. Out of 1.0 g dioxygen, 1.0 g atomic oxygen and 1.0 g ozone, the maximum number of oxygen atoms are contained in
- 1.0 g of atomic oxygen
 - 1.0 g of ozone
 - 1.0 g of oxygen gas
 - All contain the same number of atoms
31. Total number of electrons present in 4.4 g oxalate ion ($C_2O_4^{2-}$) is
- $0.05N_A$
 - $2.3N_A$
 - $2.2N_A$
 - $2.1N_A$
32. Total number of valence electrons present in 6.4 g peroxides ion (O_2^{2-}) is
- $0.2N_A$
 - $3.2N_A$
 - $3.6N_A$
 - $2.8N_A$
33. The number of F^- ions in 4.2 g AlF_3 is (Al = 27, F = 19)
- 0.05
 - 9.03×10^{22}
 - 3.01×10^{22}
 - 0.15
34. A quantity of 13.5 g of aluminium when changes to Al^{3+} ion in solution, will lose (Al = 27)
- 18.0×10^{23} electrons
 - 6.02×10^{23} electrons
 - 3.01×10^{23} electrons
 - 9.1×10^{23} electrons
35. If an iodized salt contains 1% of KI and a person takes 2 g of the salt every day, the iodine ions going into his body everyday would be approximately (K = 39, I = 127)
- 7.2×10^{21}
 - 7.2×10^{19}
 - 3.6×10^{21}
 - 9.5×10^{19}
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