CHEMISTRY

21. Which of the following is a lyophobic colloid?
    (1) Gelatin
    (2) Sulphur
    (3) Starch
    (4) Gum arabic

22. The wave mechanical model of an atom is based upon which of the following equations?
    (1) Schrodinger's equation
    (2) de Broglie's equation
    (3) Heisenberg's uncertainty principle
    (4) All the above

23. The Tyndall effect associated with colloidal particles is due to
    (1) presence of electrical charges
    (2) scattering of light
    (3) absorption of light
    (4) reflection of light

24. In the colloidal state the particle size ranges
    (1) below 1 nm
    (2) between 1 nm to 1000 nm
    (3) more than 100 nm
    (4) none of the above

25. Given below are a few electrolytes, indicates which one among them will bring about the coagulation of a gold sol. quickest and in the least of concentration?
    (1) NaCl
    (2) $MgSO_4$
    (3) $Al_2(SO_4)_3$
    (4) $K_4[Fe(CN)_6]$

26. During the process of electrolytic refining of copper, some metals present as impurity settle as anode mud. These are
    (1) Sn and Ag
    (2) Pb and Zn
    (3) Ag and Au
    (4) Fe and Ni

27. In the electrolysis of water, one Faraday of electrical energy would evolve
    (1) One mole of oxygen
    (2) One g atom of oxygen
    (3) 8 g of oxygen
    (4) 22.4 litres of oxygen

28. In infinite dilutions, the molar conductances of Ba^{2+} and Cl^- are 127 and 76 $ohm^{-1} cm^2 mol^{-1}$. The equivalent conductivity of $BaCl_2$ at infinite dilution is
    (1) 101.5
    (2) 139.5
    (3) 203.5
    (4) 279.5

29. Conductivity of a strong electrolyte
    (1) Increases on dilution
    (2) Does not change considerably on dilution
    (3) Decreases on dilution
    (4) Depends on density

30. If equivalent conductance of 1M benzoic acid is $12.8 ohm^{-1} cm^2$ and if the conductance of benzoate ion and H^+ ion are 42 and $288.42 ohm^{-1} cm^2$ respectively. its degree of dissociation is
    (1) 39%
    (2) 3.9%
    (3) 0.35%
    (4) 0.039%