

## CHEMISTRY

### BOOKS - KALYANI CHEMISTRY (ENGLISH)

#### SELF ASSESSMENT PAPER -5

#### Questions

1. Solids with conductivities in the ..... range from  $10^6$  to  $10^4 \text{ ohm}^{-1} \text{m}^{-1}$  are called.....



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2. With the help of a diagram, explain the physical significance of energy of activation ( $E_a$ ) in chemical reactions.

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3. What are tranquilizers ? What are its two types ?

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4. A solution of glucose in water is labelled as 10% w/w, what would be the molality and mole fraction of each component in the solution ? If the density of solution is  $1.2 \text{ g mL}^{-1}$ , then what shall be the molarity of the solution ?

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5. An element with molar mass  $2.7 \times 10^2 \text{ kg mol}^{-1}$  forms a cubic unit cell with edge length 405 pm. If its density is  $2.7 \times 10^3 \text{ kg m}^{-3}$ , what is the nature of the cubic unit cell?



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6. An antifreeze solution is prepared from 222.6 g of ethylene glycol ( $C_2H_6O_2$ ) and 200 g of water. Calculate the molality of the solution. If the density of the solution is  $1.072 \text{ g mL}^{-1}$ , then what shall be the molarity of the solution ?



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7. Explain giving reasons :

(i) Transition metals and many of their compounds show

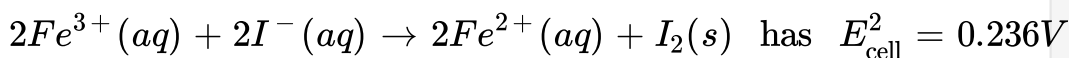
paramagnetic behaviour.

(ii) Z (Z= 40) and Hf (Z= 72) have almost identical radii.



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8. The cell in which the following reaction occurs :



at 298K. Calculate the standard Gibbs energy and the equilibrium constant of the cell reaction.



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