Model Question Paper

Questions: 40
Time : 40 Minutes   **Max. Marks 40 x 1 : 40**

<p style="text-align:center">**SAMPLE QUESTIONS**</p>

1. The number of d-electrons present in Fe^{2+} (atomic number of Fe=26) ion is:
   A)   4   B)   5   C)   6   D)   3   E)   2

2. The number of atoms present in a hexagonal close packed unit cell is
   A)   6   B)   10   C)   8   D)   12   E)   2

3. Which one of the following pairs of solutions can be expected to be isotonic at the same temperature?
   A) 0.1 M urea and 0.1M NaCl   B) 0.1 M urea and 0.1M $MgCl_2$
   C) 0.1M NaCl and 0.1M Na_2SO_4 D) 0.1M $Ca(NO_3)_2$ and 0.1M Na_2SO_4
   E) 0.1M NaCl and 0.1M sucrose

4. The pressure cooker reduces cooking time because
   A) heat is more evenly distributed
   B) the high pressure tenderizes the food
   C) the boiling point of water inside the cooker is elevated
   D) the boiling point of water inside the cooker is depressed
   E) none of all above

5. Out of ice, water and steam, the most random state is
   A)   ice   B)   water   C)   steam
   D)   both ice and water   E)   all the three

6. To neutralize completely 20ml of 0.1M aqueous solution of phosphorous acid(H_3PO_3),the volume of 0.1M aqueous KOH required is
   A)   10ml   B)   30ml   C)   40ml   D)   60 ml
   E)   20ml

7. The standard electrode potentials for Pb^{2+} | Pb and Zn^{2+} | Zn are -0.126 V and -0.763 V respectively. The emf of the cell Zn| Zn^{2+}(1M) || Pb^{2+}(1M)|Pb is
   A)   0.637V   B)   -0.637V   C)   -0.889V   D)   0.889V
   E)   -0.763V

8. The half life period for a first order reaction is 69.3 seconds. Its rate constant is
   A) $10^{-2}\ s^{-1}$ B) $10^{-4}\ s^{-1}$ C) $10^{2}\ s^{-1}$ D) $10\ s^{-1}$
   E) $10^{-3}\ s^{-1}$

9. For a chemical reaction, A→B, it is observed that the rate of reaction doubles when the concentration of A is increased four times. The order of reaction with respect to the [A] is
   A)   2   B)   1   C)   ½   D)   0   E)   3

10. How many layers are adsorbed in a chemical adsorption?
    A)   one   B)   two   C)   three   D)   four   E)   zero

11. Which one of the following is an acidic buffer?
    A)   0.1M HCOOH and 0.1M HCOONa
    B)   0.1M CH_3COOH and 0.1M HCOONa
    C)   0.1M CH_3COOH and 0.1M $CH_3 CH_2COONa$
    D)   0.1M HCl and 0.1M NaCl
    E)   0.1M CH_3COOH and 0.1M HCl

12. Out of all the halogen acids,the weakest acid is
    A)   HI   B)   HBr   C)   HF   D)   HI   E) $HClO_4$

13. A reduction in atomic size with increase in atomic number is a characteristic of elements
    of
    A)   d-block   B)   f-block   C)   p-block
    D)   radioactive series   E)   s-block

14. What is the coordination number of cobalt in $[Co(NH_3)_6]Cl_3$?
    A)   5   B)   6   C)   4   D)   3   E)   2

15. The formula of Prussian blue is
    A) $Fe_3[Fe(CN)_6]_2$ B) $Fe_2[Fe(CN)_6]_3$ C) $Fe_4[Fe(CN)_6]_3$
    D) $Fe_3[Fe(CN)_6]_4$ E) $Fe[Fe(CN)_6]$

16. Which one of the following molecules is non- linear?
    A) SO_2 B) CO_2 C)   HCN   D) C_2H_2 E) CS_2

17. Which of the following gives iodoform test?
    A) CH_3OH B) $CH_3COCH_2CH_3$ C)   HCHO
    D) CH_3COOH E)   HCOOH

18. The IUPAC name of $CH_3COCH(CH_3)_2$ is
    A)   3-methyl-2-butanone B)   isopropyl methyl ketone
    C)   2-methyl-3-butanone D)   4-methyl isopropyl ketone
    E)   1,1-dimethyl acetone

19. Which of the following is the strongest acid?
    A) CH_3COOH B) $CH_3CHClCOOH$ C) CH_3CH_2COOH
    D) $CH_2 ClCH_2COOH$ E) Cl_3CCOOH

20. Ethylamine reacts with nitrous acid to form
    A) C_2H_5OH B) C_2H_5OH, N_2 , H_2O C) $C_2H_5N_2 {}^+ Cl^-$
    D) C_2H_5NHOH, NH_3 E) C_2H_5OH, H_2O

....