UG (except BBA) CET Sample Paper

CHEMISTRY : (20 Questions)

1. If we take 44 gm. of CO_2 and 14 gm. of N_2 as a mixture, what is the mole fraction of CO_2 in the mixture?

   A. 1/5
   B. 1/3
   C. 2/3
   D. 1/4

2. According to Kinetic theory of gases, what will be the temperature when the rms velocity is 4 times of that at 300 K?

   A. 300 K
   B. 900 K
   C. 4800 K
   D. 1200 K

3. The enthalpy of vaporization of water is 186.5 J/mol. The entropy of vaporization is

   A. $0.5 \ JK^{-1}mol^{-1}$
   B. $1.0 \ JK^{-1}mol^{-1}$
   C. $1.5 \ JK^{-1}mol^{-1}$
   D. $2.0 \ JK^{-1}mol^{-1}$

4. If the solubility of Ag_2CrO_4 is S moles/litre , then its solubility product will be

   A. S^2
   B. S^3
   C. $4S^3$
   D. $2S^3$

5. The rate of the reaction becomes 4 times when the temperature is raised from 293 K to 313 K. The activation energy for such a reaction would be

   A. $50.855 \ kJmol^{-1}$
   B. $52.849 \ kJmol^{-1}$
   C. $54.855 \ kJmol^{-1}$
   D. $56.855 \ kJmol^{-1}$

6. The normality of 10% (weight/volume) acetic acid is

A. 1N
B. 10N
C. 1.66N
D. 0.83N

7. In the reaction : $3Br_2 + 6CO_3^{2-} + 3H_2O \rightarrow 5Br^- + BrO_3^- + 6HCO_3^-$

A. Bromine is oxidized and carbonate is reduced
B. Bromine is reduced and water is oxidized
C. Bromine is neither oxidized nor reduced
D. Bromine is both reduced and oxidized

8. A cell constituted by 2 electrodes $A(E^0_{A/A^+} = 0.35V)$ and $B(E^0_{B/B^+} = -0.42V)$ has the value of E^0_{cell} = ?

A. 0.07 V
B. 0.77 V
C. -0.77 V
D. -0.07 V

9. Only 1/8 th of the original amount of a radioactive element remains after 96 min. The value of $t_{1/2}$ of this element is

A. 12.0 min
B. 32.0 min
C. 24.0 min
D. 48.0 min

10. Octahedral molecular shape exists in_____hybridization ?

A. sp^3d
B. sp^3d^3
C. sp^3d^2
D. None of these

11. Which of the following has the maximum number of unpaired electrons?

A. Mg^{2+}
B. Ti^{3+}
C. V^{3+}
D. Fe^{2+}

12. In the electrolytic process for the manufacture of NaOH from NaCl solution, the ion discharged at the anode is

A. OH^-
B. O^{2-}
C. Cl^-
D. All of these

13. IUPAC name of $K_3[Fe(CN)_6]$ is

A. Potassium ferricyanide
B. Potassium ferrocyanide
C. Potassium hexacyanoferrate(III)
D. Prussian blue

14. In P_4O_{10} the number of oxygen atoms bonded to each phosphorous atom is

A. 3
B. 5
C. 2
D. 4

15. Iron sheets are galvanized by

A. Tin plating
B. Zinc plating
C. Copper plating
D. Silver plating

16. A dark green bead in the borax bead test indicates the presence of

A. Cr^{3+}
B. Mn^{2+}
C. Co^{2+}
D. Ni^{2+}

17. The compound which gives the most stable carbonium ion on dehydration is

A. Isobutyl alcohol
B. Tert-butyl alcohol
C. N-butyl alcohol
D. Sec-butyl alcohol

18. Glycerol on treatment with excess HI gives

A. 1,2,3-triiodopropane
B. 1,3-diiodopropane
C. 2-iodopropane
D. 3-iodopropane

19. The wrong statement about Cannizaro reaction is

A. In Cannizaro reaction the oxidation number of carbon of -CHO increases as well as decreases
B. Cannizaro reaction is a disproportionation reaction
C. Cannizaro reaction is responded only by the first member of alkanal series
D. Non-α hydrogen containing aldehydes give Cannizaro reaction

20. Bakelite is made from phenol and formaldehyde. The initial reaction between them is

A. Electrophilic aromatic substitution
B. Nucleophilic aromatic substitution
C. Free radical reaction
D. Aldol reaction