

Half Yearly Examination 2014-15

Class - XII

Subject - Chemistry (043)



Time : 3 hrs.

M. M. : 70

Note :-

- (i) All questions are compulsory.
- (ii) Q. Nos. 1 to 5 are very short answer type questions & carry 1 mark each.
- (iii) Q. Nos. 6 to 10 are short answer type questions & carry 2 marks each.
- (iv) Q. Nos. 11 to 22 are also short answer type questions & carry 3 marks each.
- (v) Q. Nos. 23 is value based question & carry 4 marks.
- (vi) Q. Nos. 24 to 26 are long answer type questions & carry 5 marks each.
- (vii) Use logtables if necessary.

- Q.1. Define the term "amorphous". Give one example. (1)
- Q.2. The reaction -
 $A + 2B \rightleftharpoons C$ obeys the rate equation,
 $\text{rate} = k[A]^{1/2} [B]^{3/2}$. What is the order of reaction? (1)
- Q.3. Define peptization. (1)
- Q.4. Draw the structure of the following compound
Hexane 1, 6 diaic acid. (1)
- Q.5. Name a substance that can be used as an antiseptic as well as disinfectant. (1)
- Q.6. A cubic solid is made of two elements X & Y atoms. Y are at the corners of the cube & X at the body centre. What is the formula of the compound? (2)
- Q.7. Define the term osmosis & osmotic pressure. Is the osmotic pressure of a solution a colligative property? Explain. (2)
- Q.8. What type of a battery is the lead storage battery? What the anode & the cathode reactions & the overall reaction occur in a lead storage battery when current draw from it. (2)
- Q.9. Write difference between Lyophilic & Lyophobic colloids. (2)
- Q.10. Write the structure of the monomer for each of the following polymers. (2)
- (i) polythene (ii) PVC

- Q.11. Silver crystallises in face centered cubic unit cells. Each side of the unit cell has a length of 409 pm. What is the radius of silver atom ? (3)
- Q.12. Write the difference between order & molecularity of reaction. (3)
- Q.13. A first order decomposition reaction takes 40 min for 30% decomposition. Calculate its $t_{1/2}$ value. (3)
- Q.14. Write the difference between multimolecular & macromolecular colloids ? Give one example of each type. How are associated colloids different from these two types of colloids ? (3)
- Q.15. Write difference between SN^1 & SN^2 reactions ? (3)
- Q.16. Complete the r^n - (1+1+1)
- (A) $CH_2 = CH_2 + Br_2 \xrightarrow{CCl_4}$
- (B)  (3)
- (C) $CH_3-CH=CH_2 + HBr \longrightarrow$
- Q.17. Why phenol is more acidic than alcohol ? (3)
- Q.18. Why propanol is soluble in water. (3)
- Q.19. Give the chemical tests to distinguish between
- 1-propanol & 2-propanol
 - Acetophenone & Benzophenone
 - Ethanol & propanol
- (3)
- Q.20. Complete the reaction -
- $C_6H_5N_2Cl + CH_3CH_2OH \longrightarrow$
 - $RNH_2 + CHCl_3 + KOH \longrightarrow$
 -  (3)
- Q.21. Arrange the following :- (3)
- $C_6H_5NH_2$, $(C_2H_5)_2NH$, $C_2H_5NH_2$ (increasing Basic strength)
 - CH_3CHO , CH_3COCH_3 , $CH_3-CO-\underset{\text{CH}_3}{\text{CH}}-CH_3$ (reactivity towards HCN)
 - $\underset{\text{Cl}}{\text{CH}_2}\text{COOH}$, CH_3CH_2COOH , CH_3COOH (increasing acidic strength) (3)

Q.22. Write the difference between thermosetting & thermoplastic polymers with example? **(3)**

Q.23. There were two washermen, Ramu & Gopi in a village. Both used to wash their clothes on same pond but Ramu's service was better than Gopi. Gopi was worried that why his clothes were not washed well. One day Gopi asked Ramu, that how he can provide better service. Ramu has advised him to use the detergent.

Answer the following questions :-

(i) Why Gopi's service was not better ?

(ii) Why Ramu has advised Gopi to use detergent ?

(iii) How many types of detergent are found & write their name ?

(iv) What value did you obtain from the above discussion ? **(1+1+1+1)**

Q.24. (A) Express the relation among cell constant resistance of the solution in the cell & conductivity of the solution.

(B) The electrical resistance of a column of 0.05M NaOH solution of diameter 1 cm & length 50 cm is $5.55 \times 10^3 \Omega$. Calculate its resistivity, conductivity. **(2+3)**

Q.25. (A) Define -

(i) Mole fraction

(ii) Raoult's law

(B) Find the boiling point of a solution containing 0.520 gm of glucose ($C_6H_{12}O_6$) dissolved in 80.2 gm of water (Given k_b for water = 0.52 K m^{-1}) **(2+3)**

Q.26. (A) Write the equation for -

(i) Cannizzaro Reaction

(ii) Rosenmund reduction

(B) How would you obtain ?

(i) But-2-enal from ethanol

(ii) Butanoic acid from butanol

(iii) Benzoic acid from ethyl benzene **(2+3)**