

FACULTY OF SCIENCE

B.Sc. I Year (Practical) Examination

Subject : CHEMISTRY
Paper – I

QUESTION BANK

W.E.F. Annual 2009

Time : 3 Hours}

{Max. Marks: 50

I. Write brief procedure along with group separation table for the identification of anions and cations in the following mixture. (6)

1. SO_4^{-2} ; Cl^- ; Bi^{+3} ; Al^{+3}
2. S^{-2} ; NO_3^- ; Cd^{+2} ; Ca^{+2}
3. CH_3COO^- ; CO_3^{-2} ; Ag^+ ; NH_4^+
4. S^{-2} ; PO_4^{-3} ; Cu^{+2} ; Zn^{+2}
5. NO_3^- ; Cl^- ; Ni^{+2} ; Ba^{+2}
6. SO_4^{-2} ; Br^- ; K^+ ; Zn^{+2}
7. CO_3^{-2} ; SO_4^{-2} ; Cr^{+3} ; Sr^{+2}
8. CH_3COO^- ; SO_4^{-2} ; Hg_2^{+2} ; NH_4^+
9. BO_2^- ; Cl^- ; Cd^{+2} ; Al^{+3}
10. I^- ; CO_3^{-2} ; Sn^{+2} ; Mg^{+2}
11. Br^- ; NO_3^- ; Sb^{+3} ; Ca^{+2}
12. CO_3^{-2} ; SO_4^{-2} ; Hg^{+2} ; NH_4^+
13. I^- ; PO_4^{-3} ; Fe^{+3} ; Mg^{+2}

..2..

II. Analyse the given mixture using semi-micro qualitative technique systematically and report two anions and two cations present in it . (34)

- | | |
|--------------------------------------------------------|-----------------------------------------------------------------|
| 1. $(\text{NH}_4)_3\text{PO}_4 + \text{CdAC}_2$ | 2. $\text{Al}_2(\text{SO}_4)_3 + \text{ZnCl}_2$ |
| 3. $\text{Al Cl}_3 + \text{Ba}(\text{NO}_3)_2$ | 4. $\text{Al Cl}_3 + \text{Ca} (\text{NO}_3)_2$ |
| 5. $\text{Al Cl}_3 + \text{Sr}(\text{NO}_3)_2$ | 6. $\text{CaCO}_3 + \text{Mg} (\text{NO}_3)_2$ |
| 7. $\text{Sr}(\text{NO}_3)_2 + \text{Mg CO}_3$ | 8. $\text{Sr}(\text{NO}_3)_2 + \text{Cd AC}_2$ |
| 9. $\text{Mg SO}_4 + \text{NH}_4 \text{I}$ | 10. $\text{Fe SO}_4 + \text{NH}_4 \text{Cl}$ |
| 11. $\text{Pb}(\text{NO}_3)_2 + \text{NH}_4\text{AC}$ | 12. $\text{Bi}(\text{NO}_3)_3 + (\text{NH}_4)_3\text{PO}_4$ |
| 13. $\text{Zn Cl}_2 + \text{Ba AC}_2$ | 14. $\text{Sr} (\text{NO}_3)_2 + \text{NH}_4\text{Cl}$ |
| 15. $\text{Ca CO}_3 + \text{NH}_4 \text{Br}$ | 16. $\text{Ba} (\text{NO}_3)_2 + \text{MgI}_2$ |
| 17. $\text{Ba CO}_3 + \text{NH}_4 \text{AC}$ | 18. $\text{Mg SO}_4 + \text{NH}_4\text{Br}$ |
| 19. $\text{Cd Cl}_2 + (\text{NH}_4)_3 \text{PO}_4$ | 20. $\text{Pb AC}_2 + \text{NH}_4\text{NO}_3$ |
| 21. $\text{Ca CO}_3 + \text{NH}_4 \text{Br}$ | 22. $\text{Mg SO}_4 + (\text{NH}_4)_2 \text{CO}_3$ |
| 23. $\text{Zn Cl}_2 + \text{NH}_4 \text{Ac}$ | 24. $\text{Al}_2 (\text{SO}_4)_3 + (\text{NH}_4)_2 \text{CO}_3$ |
| 25. $\text{Ba}(\text{NO}_3)_2 + \text{NH}_4 \text{Ac}$ | |

OR

II.(a) Analyse the given mixture using semi-micro qualitative technique systematically and report only two cations present in it. (24)

(b) Following the given procedure, prepare a crude sample of one of the following in-organic compounds. (10)

1. Tetrammine copper (II) sulphate
2. Potash Alum. $\text{KAl} (\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$
3. Hexamine cobalt (III) Chloride

Subject : Chemistry

**Paper – I
(Scheme of Valuation)**

- I. Procedure – 6 marks
- II.(a) Solubility – 3 marks
- (b) Flame test – 3 marks
- (c) 2 anions – 2 x 5 = 10 marks
(Identification and confirmation)
- (d) 2 cations – 2 x 8 = 16 marks
(Identification and confirmation)
- (e) Report of Ions in the given mixture 2 marks

OR

- II.(a)1. Solubility – 3 marks
2. Flame test – 3 marks
3. 2 cations – 2 x 8 = 16 marks
(Identification and confirmation)
4. Report of cations in the given mixture – 2 marks
- (b) Preparation of in-organic compound – 10 marks
- III. Record – 5 marks
- IV. Vivavoce – 5 marks