VITTHALBHAI PATEL & RAJRATNA P. T. PATEL SCIENCE COLLEGE

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B. Sc. (SEMESTER – I)

SUBJECT : GENERAL CHEMISTRY (US01CCHE01)

DATE : 05–10–2017 **INTERNAL TEST – OCTOBER, 2017** **MARKS : 25**

DAY : THURSDAY **TIME : 01.30 P.M. TO 02.30 P.M.**

Note: (i) All questions are to be attempted. (ii) Figures to the right indicate marks.

Q.1 Choose the correct option for the following : **[3]**

(i) According to Lewis concept, $AlCl_3$ is .....

(a) Acid (b) Base (c) Neutral (d) None of these

(ii) Which of the following compound exhibit cis-trans isomerism ?

(a) 1-butene (b) 1-propene (c) Isobutene (d) 2-butene

(iii) Which of the following chelating agent is used for the removal of harmful radioactive metals from human body ?

(a) Glycinato (b) en (c) edta (d) dmg

Q.2 Answer the following (Attempt any two) : **[4]**

(i) Define : (a) Sparingly soluble salt (b) Selective precipitation

(ii) Give the classification of hydrocarbon.

(iii) Describe the uses of chelates.

Q.3 (a) Discuss Arrhenius concept of acids and bases. What are the limitations of this concept ? **[3]**

(b) Calculate the solubility of $PbSO_4$ in (i) pure water and in (ii) 0.1 M $Pb(NO_3)_2$. **[3]**

(Given Ksp of $PbSO_4$ is 1.8×10^{-8} M)

OR

Q.3 (a) Discuss the term common ion effect with suitable example. **[3]**

(b) All Lewis bases are Lowry – Bronsted bases but all Lewis acids are not Lowry – Bronsted acids. Explain. **[3]**

Q.4 (a) The names given below are objectionable. Write their structure and give their IUPAC name. **[3]**

(i) 2,4,5-Trimethylhexane (ii) 2-Isopropyl-1-propene (iii) 1,1,1-Trimethylpentane

(b) Combustion of 6.51 mg of a compound gave 20.47 mg of carbon dioxide and 8.3 mg of water. The molecular weight was found to be 84 gm/mole. Calculate molecular formula of the compound. (At. Wt. of C = 12, H = 1, 0 = 16) **[3]**

OR **[PTO]**

Q.4 (a) Boiling point of n-Butane, n-Pentane and n-Hexane 0°, 36° and 69°C respectively. Explain it. **[3]**

(b) Give all possible isomeric structures of C_5H_{12} and give their IUPAC name. **[3]**

Q.5 (a) Give the name and structure for the following abbreviations. **[3]**

(i) $(ox)^{-2}$ (ii) $(dmg)^{-}$ (ii) en

(b) Define coordination number and discuss the geometry of complex having coordination number 2 and 3. **[3]**

OR

Q.5 (a) Write IUPAC name for the following complexes. **[3]**

(i) $[Co(NH_3)_6]\ Cl_3$ (ii) $[Pt(Py)_4]\ [PtCl_4]$ (iii) $K_2[PtCl_6]$

(b) Define Ligands and give its classification based on the number of donor atoms present in it. **[3]**

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