

VITTHALBHAI PATEL & RAJRATNA P. T. PATEL SCIENCE COLLEGE

VALLABH VIDYANAGAR

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.

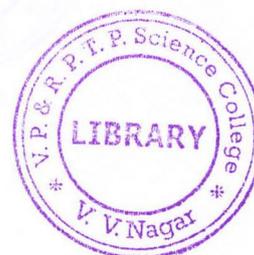
Note: (i) All questions are to be attempted. (ii) Figures to the right indicate marks.

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) :

- (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 K_{sp} 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, O = 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) $(\text{ox})^{-2}$ (ii) $(\text{dmg})^{-}$ (iii) 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) $[\text{Co}(\text{NH}_3)_6] \text{Cl}_3$ (ii) $[\text{Pt}(\text{Py})_4] [\text{PtCl}_4]$ (iii) $\text{K}_2[\text{PtCl}_6]$
(b) Define Ligands and give its classification based on the number of donor atoms present in it. [3]



☺ ☺ ☺