Note: (i) All questions are to be attempted.

Q-2 Answer the following (Attempt any ten):

(i) (ii)

(iii)

(iv)

Define: Accuracy and Precision.

Write advantages of instrumental method.

3.2, be rejected? [Given Qcrit is 0.570]. Define: Lewis acids and lewis bases.

(ii) Figures to the right indicate marks.

No. of printed pages : 3

SARDAR PATEL UNIVERSITY B.Sc. (I Semester) (NC) Examination Monday, 18th April 2016 2.30 am - 4.30 pm

US01CCHE01 : GENERAL CHEMISTRY

Total Marks: 70

[10]

[20]

(i)	How many significant figure is present in the data: 0.1025?
. ,	(a) 1 (b) 2 (c) 3 (d) 4
(ii)	The analysis in which we find out selected constituents of the sample is
(/	known as
	(a) Deceriment
	() The state and you
(iii)	(c) Trace constituent analysis (d) Complete analysis The instrumental technique in which the
()	The instrumental technique in which the measurement of difference in
,	temperature between sample and reference material is called
(iv)	
(**)	Addition of small amount of NaCl to saturated solution of AgCl will
	(a) Increase the solubility of AgCl (b) Decrease the solubility of AgCl (c) Not offset on the solubility of AgCl
(v)	(c) Not effect on the solubility of AgCl (d) None of these
(1)	Which of the following is Lowry – Bronsted as well as Lewis base? (a) NH ₃ (b) NH ₄ ⁺ (c) BF ₂ (d) CO ₂
(vi)	(v) D1)
(11)	Which of the following compound is alkenol?
(vii)	(a) Cyclohexanol (b) Amyl alcohol (c) 2 - butenal (d) Allyl alcohol
(VII)	formla of a compound which shows the simplest ratio of t
	atoms present in it.
(viii)	(a) Structural (b) Molecular (c) Empirical (d) None of these
(VIII)	A tertiary carbon is bonded directly to
(ix)	(a) 4 carbon (b) 3 carbon (c) 2 carbon (d) 1 carbon
(1X)	Which of the following is used in the elimination of harmful radioactive
	metals from the body?
(v)	(a) Glycinato (b) Ethylene diamine (c) pyridine (d) EDTA
(x)	Which of the following geometry is exist in [Ni (DMG) ₂] ⁰ ? (a) Tetrahedral (b) Octahedral (c) Square planer (d) Linear

The following values were obtained for the determination of cadmium in a

sample of dust: 4.3, 4.1, 4.0, 3.2, 4.2, 3.9 and 4.0 µg g⁻¹. Should the value,

	(V)	piscuss in detail about self ionization of water and prove that $pH + pOH = pK_w = 14$.		
	(vi)	but in pare water,		
	(vii)	[Given K_{sp} of AgCl = 2.8 x 10^{-10}]. Describe Lassaign test for the detection of nitrogen and Sulphur.		
	(viii	Draw E, Z structure for 2-Choloro-2-butene.		
	(ix)	Draw all possible isomeric structure for aliphatic compound having		
	, ,	molecular formula C_4H_{10} and give their IUPAC name.		
	(x)	Define: Ligands and Coordination sphere.		
	(xi)	Give the structural formula for,		
		(a) Potassium hexacyanoferrate (III) (b) Dichloroargentate (I) ion.		
	(xii)	Differentiate between: Double salt and complex compound.		
	~.			
Q-3	broad classification and application of chemical analysis.	[10]		
		on.		
		OR		
0.1	0:			
Q-3	Give classification of error and list out different methods for the minimization of systematic error and describe any three of them.			
Q-4	[A]	Explain selective precipitation with suitable example.	[4]	
	[B]	"All Lowri – Bronsted bases are Lewis bases whereas all Lowri – Bronsted acids are not Lewis acids." Explain.	[3]	
	[C]	Calculate the solubility of PbSO ₄ in (i) pure water and in (ii) 0.1 M Pb(NO ₃) ₂ .	[2]	
		[Given K_{sp} of PbSO ₄ = 1.8 x 10 ⁻⁸].	[3]	
		OR		
Q-4	[A]	Discuss the Arrhenius concept of acids and bases. What are the limitation of	[4]	
	LD i	this concept?	1.1	
	[B]	Define: (i) Sparingly soluble salt (ii) common ion effect (iii) Lowery- Bronsted acids.	[3]	
	[C]	Calculate the solubility of CaF ₂ in (i) pure water and in (ii) 0.1 M Ca(NO ₃) ₂ . [Given K_{sp} of CaF ₂ = 1.7 x 10 ⁻¹⁰].	[3]	

Q	2-5 [A	3]	The names given below are objectionable. Write their structure and correlation of the compound	8° [3]
			OR	
Q-5	[A] [B] [C]		Draw the structure for the following and write their IUPAC name. (i) Vinyl chloride (ii) Isobutane (iii) Allyl bromide (iv) Neopentane. Write kjeldahal's method for the quantitative analysis of nitrogen. What is the percentage composition of C, H and Cl in the molecular formula of C_3H_7Cl ? (Given: Atomic Weight of $C = 12.01$, $H = 1.008$, $Cl = 35.45$ gm/mole)	[4] [3] 1 [3]
Q-6	[A] [B] [C]	(Define Chelates and describe their uses. Describe the possible geometries of complex having coordination number six. Give the name and structure for the following abbreviations. i) en (ii) (dmg) (iii) pn	[4] [3] [3]
			OR	
Q-6	[A] [B] [C]	W	ive the classification of ligands. efine: (i) Ambidentate ligand (ii) Coordination number (C.N.) (iii) Simple salt (rite IUPAC name for the following coordination compounds: [Ag(NH ₃) ₂] + (ii) [Co (NH ₃) ₆] Cl ₃ (iii) Na ₃ [Fe (CN) ₆]	[4] [3]

X = X == X