SUBJECT- CHEMISTRY

Required apparatus and Chemicals

Sr. no	Name of the Experiment	Required apparatus	Required Chemicals	Yes	No
1.	Volumetric Experiments	i. Burette ii. Pipette iii. Conical flask iv. Volumetric flask v. Balance vi. Beaker vii. Glass rod	i. Oxalic acid ii. Ferrous ammonium sulphate iii. Potassium permanganate		
2.	Chemical Kinetics	i. Conical flask ii. Stop watch iii. Measuring cylinder iv. 5ml and 25 ml	i. Sodium thiosulphate ii. Hydrochloric acid		
3.	Electrochemistry	i. Daniel cell ii. Salt bridge iii. Voltmeter	i. Zinc sulphate ii. Copper sulphate		
4.	Thermochemistry Enthalpy of displacement Enthalpy of Neutralization Enthalpy of Hydrogen bond formation	i. Polythene bottle ii. Rubber cork iii. Beaker iv. Measuring cylinder v. Thermometer(1/10) vi. Stirrer	1. Copper sulphate 2. Zinc dust 3. Hydrochloric acid 4. Sodium hydroxide 5. Acetone Chloroform 6. Distilled water		
5.	Inorganic preparation Mohr salt	i. Porcelain(china) dish ii. Beakers	i. Ammonium sulphate ii. Ferrous sulphate		

	Potash alum Potassium trioxalato ferrate	iii. Funnel iv. Glass rod v. Tripod stand vi. Wire gauze vii. Sand bath viii. Pair of tongs	iii. Sulphuric acid iv. Potassium sulphate v. Aluminium sulphate vi. Ferric chloride vii. Oxalic acid viii. Potassium hydroxide ix. Potassium oxalate		
6.	Organic preparation Dibenzalacetone Aniline yellow dye Acetanilide p-Nitroacetanilide	i. Conical flask ii. Beaker iii. Test tubes iv. Glass rod v. Ice bath vi. Buckner funnel vii. Vacuum pump viii. Water bath ix. Hard glass tube	i. Benzaldehyde ii. Acetone iii. 10% NaOH iv. Ethanol/rectified spirit v. Aniline vi. Sodium Nitrite vii. Conce HCl viii. Conce HNO_3 ix. Conce H_2SO_4 x. β-Napthol xi. Acetic acid xii. Glacial acetic acid xiii. Acetanilide xiv. Acetyl chloride		
7.	Functional Group determination	i. Test tubes ii. Test tube stand iii. Test tube holder	i. Benzoic acid ii. Oxalic acid iii. Acetic acid iv. Salicylic acid v. Resorcinol vi. p-Nitroaniline vii. m-Nitroaniline viii. Aniline ix. Ethanol x. Glucose xi. Acetone xii. β-Napthol xiii. 10% $NaHCO_3$ xiv. $FeCl_3$ xv. Schiffs reagent xvi. Tollen's regent xvii. Sodium		

				nitroprusside solution		
			viii.	Conc. HCl		
			xix.	$NaNO_2$		
			xx.	β-Napthol in NaOH		
			xxi.	1% Alkaline $KMnO_4$		
			xxii.	$K_2Cr_2O_7$ crystals		
			xiii.	Sodium metal		
8.	Inorganic Qualitative Analysis	Test tubes Blow pipe Test tube holder Test tube stand	xiv.	Charcoal		
			xxv.	Sodium carbonate, $NaNO_3$		
			xvi.	MnO_2 powder		
			xvii.	Copper foils		
			viii.	Barium chloride, $BaCl_2$		
			xix.	Ammonium molybdate		
			xxx.	Silver nitrate, $AgNO_3$		
			xxi.	Dilute HNO_3		
			xxii.	Ammonium hydroxide, NH_4OH		
			xiii.	Cl_2 water		
			xiv.	Barium nitrate, $Ba(NO_3)_2$		
			xxv.	Acetic acid, CH_3COOH		
			xvi.	Potassium dichromate, $K_2Cr_2O_7$		
			xvii.	Potassium iodide, KI		
			viii.	Lead acetate $(CH_3COOH)_2Pb$		
			xix.	Starch solution		
			xl.	Turmeric paper		
			xli.	Blue litmus paper		
			xlii.	Red litmus paper		
			xliii.	Starch paper		

			xliv. Mercuric chloride, $HgCl_2$ xlv. Hydrogen sulphide, H_2S gas/solution xlvi. Ammonium chloride, NH_4Cl lvii. Ammonium carbonate, $(NH_4)_2CO_3$ viii. Sodium bisulphate, Na_2HPO_4 xlix. Potassium ferrocynide, $K_4Fe(CN)_6$ l. Ammonium sulphocynide, NH_4CNS li. NH_4Cl lii. $CuSO_4$ liii. Ammonium carbonate liv. NH4Cl lv. $Cu(NO_3)_2$ lvi. $Al_2(SO_4)_3$ lvii. MgSO4		
9.	Detection of carbohydrate, protein and fats	i. Test tubes ii. Test tube stand iii. Test tube holder iv. Glass rod v. Water bath	i. Felhing solution ii. Benedics solution iii. Iodine solution iv. Conc.HNO_3 v. 10% NaOH vi. 1% $CuSO_4$ vii. Chloroform viii. Benzene ix. 1% Nynhydrin solution x. Glucose powder xi. Potato solution xii. Milk xiii. Edible oil xiv. Albumin xv. Starch		

				xvi.	Cellulose		
9.	Activity	i. ii. iii. iv. v. vi. vii. viii. ix. x. xi. xii. xiii. xiv.	Evaporating dish Funnel Cotton Tripod stand Wire gauze Pair of tongs Filter paper AA cell AAA cell Phone battery Voltmeter Wire Plastic materials Volumetric flask (100 mL)	i. ii. iii. iv. v. vi.	Pthalic acid Succinic acid Acetic anhydride Methyl alcohol Salicylic acid Ferrous ammonium sulphate		

Requirement Glass wares per batch of 20 students				
Sr. No.	Name of the glass ware	Quantity	Yes	No
1.	Burette	20+2		
2.	Pipette	20+2		
3.	Conical flask (100 mL)	20+2		
4.	Funnel	20+2		
5.	Polythene bottle	20+2		
6.	Beaker 250mL	10+2		
7.	Tests tubes	150		
8.	Test tube stands	20		
9.	Porcelain dish (China dish)	10+2		
10.	Filter paper	2 box		
11.	Weighing balance	1		
12.	Thermometer (1/10)	10		
13.	Wire gauze	10		
14.	Tripod	10		
15.	Glass funnel	10		
16.	Vacuum filtration system	01		
17.	Volumetric flask (100 mL)	10+2		
18.	Porcelain tile	20		
19.	Blow pipe	20		
20.	Litmus paper (Blue, Red, starch and turmeric)			

Requirement of Chemicals per batch of 20 students				
For titration:			**Yes**	**NO**
1.	Potassium permanganate	500 g		
2.	Ferrous ammonium sulphate	500 g		
3.	Oxalic acid	500 g		
For physical experiments				
1.	Sodium hydroxide	500 g		
2.	Hydrochloric acid	500 mL		
3.	Copper sulphate	500 g		
4.	Zinc dust	100 g		
5.	Chloroform	500 mL		
6.	Acetone	500 mL		
7.	Sodium hydroxide	500 g		
For inorganic preparation				
1.	Ferrous sulphate	500 g		
2.	Ammonium sulphate	500 g		
3.	Potassium sulphate	500 g		
4.	Aluminium sulphate	500 g		
5.	Ferric chloride	500 g		
6.	Potassium hydroxide	500 g		
7.	Potassium oxalate	500 g		
Organic preparation				
1.	Benzaldehyde			
2.	Salicylic acid			
3.	Methyl alcohol			
4.	Pthalic acid			
Functional group determination				
1.	Benzoic acid	500 g		
2.	Oxalic acid	500 g		
3.	Acetic acid	500 mL		
4.	Resorcinol	100 g		
5.	β-napthol	100 g		
6.	Metanitroaniline	100 g		
7.	Paranitroaniline	100 g		
8.	Paratoluidine	100 mL		
9.	Acetone	500 mL		
Testing of food stuff				
1.	Schiffs reagent	100 mL		
2.	Tollens reagent	100 mL		
3.	Benedics reagent	100 mL		
4.	Ninhydrin test	100 mL		

5.	Potassium bisulphate	500 g		
6.	Sodium Bicarbonate	500 g		
7.	Neutral $FeCl_3$ solution	500 mL		
8.	Sodium nitroprusside solution	500 mL		
9.	Concentrated H_2SO_4	500 mL		
10.	Concentrated HCl	500 mL		
11.	Concentrated HNO_3	500 mL		
12.	$NaNO_2$ solution	500 mL		
Inorganic qualitative analysis				
1.	Charcoal	25 pieces		
2.	Sodium carbonate	500 g		
3.	MnO_2 Powder	500 g		
4.	Copper foil	100 g		
5.	Barium Chloride $BaCl_2$	500 g		
6.	Ammonium molybdate	500 g		
7.	Silver nitrate $AgNO_3$	500 mL		
8.	Dilute HNO3	500 mL		
9.	Ammonium hydroxide NH_4OH	500 g		
10.	Chlorine water	500 mL		
11.	Barium nitrate, $Ba(NO_3)_2$	500 g		
12.	Acetic acid CH_3COOH	500 mL		
13.	Potassium dichromate, $K_2Cr_2O_7$	500 mL		
14.	Potassium iodide KI	500 mL		
15.	Lead Acetate $(CH_3COOH)_2Pb$	500 mL		
16.	Starch Solution	100 mL		
17.	Turmeric paper	25strips		
18.	Blue litmus paper	25strips		
19.	Red litmus paper	25strips		
20.	Starch paper	25strips		
21.	Mercuric chloride $HgCl_2$	500 g		
22.	Hydrogen sulphide H_2S gas / solution	500 mL		
23.	Ammonium chloride, NH_4Cl	500 g		
24.	Ammonium carbonate, $(NH_4)_2CO_3$	500 g		
25.	Sodium bisulphate, Na_2HPO_4	500 g		
26.	Potassium ferrocynide, $K_4Fe(CN)_6$	500 g		
27.	Ammonium sulphocynide, NH_4CNS	500 g		

हमी पत्र

मी, श्री./श्रीम. .....
प्राचार्य, कनिष्ठ महाविदयालय.....
असे हमी पत्र लिहून देतो/देते की माझ्या कनिष्ठ महाविद्यालयाची प्रात्यक्षिक विषयासाठीची प्रयोगशाळा ही मंडळ कार्यालयाने प्रसिध्द केलेल्या उपकरणांच्या यादीप्रमाणे सर्व उपकरणांनी तसेच भौतिक सुविधांनी सुसज्ज आहे. अथवा पडताळणी समितीने प्रयोगशाळेची पडताळणी केल्यास त्यावेळी सदर उपकरणे उपलब्ध नसल्यास होणा–या कारवाईस मी स्वःत जबाबदार असेल.

दिनांक–
स्थळ–

प्राचार्यांची स्वाक्षरी व शिक्का