GOVT. GENERAL DEGREE COLLEGE, CHAPRA
DEPARTMENT OF PHYSICS
LIST OF INSTRUMENTS

Item name

Instruments corresponding Electromagnetic Theory

To verify the law of Malus for plane polarized light :

Apparatus: diode laser, polarizer-analyzer pair, photo detector, micro ammeter, dial fitted to the polarizer and an optical bench .

Complete set to determine the height of a building using sextant.

To determine the specific rotation of sugar solution using Polarimeter.

Apparatus: Half-shade polarimeter

To determine the wavelength and velocity of ultrasonic waves in a liquid (Kerosene Oil, Xylene, etc.) by studying the diffraction through ultrasonic grating.

Apparatus: Radio frequency oscillator fitted with a frequency meter, Quartz crystal slab fitted with two leads, Spectrometer, Glass cell with experimental liquid (kerosene, Toluene, Turpentine oil), Sodium lamp, Spirit level, CRO.

To verify the Stefan's law of radiation and to determine Stefan's constant

Apparatus: Regulated power supply (0- 6 V), Tungsten filament bulb (6V), rheostat (100Ω, 1A), Digital Voltmeter (0-10V) and Ammeter (0-1A).

To determine the Boltzmann constant using V-I characteristics of PN junction diode.

Apparatus: p-n junction diode, DC power supply (5V), rheostat, milliammeter (0-20 mA), voltmeter (0-2V)

To verify Brewster's law and Fresnel formulae for reflection of electromagnetic waves with the help of a spectrometer, a prism

and two polaroids

Apparatus: (i) Spectrometer, (ii) prisam, (iii) two polaroids with circular scales that can be fitted on collimator and telescope tubes, (iv) sodium vapour lamp.

Instruments corresponding Modern Physics

Photo-electric effect

and

To determine the Planck's constant using LEDs of at least 4 different colours

Apparatus: Photoelectric apparatus with a phototube, Light Emitting Diodes (LEDs) of several colors, two digital meters

To show the tunnelling effect in tunnel diode using I-V characteristics

Apparatus: complete set

Instruments corresponding Wave and Optics

To determine the slit width (a) using diffraction of single slit.

Apparatus: Spectrometer, adjustable narrow slit, telescope with a metre scale, small mirror, source of monochromatic light

To determine the slit width (a,b) using diffraction of double slits.

Apparatus: complete set

To determine refractive index of the Material of a prism using sodium source.

Apparatus: Spectrometer, prism, prism clamp, sodium vapour lamp, spirit level, a magnifying lens and a reading lamp.

To determine wavelength of sodium light using Fresnel Biprism

Apparatus: Optical bench with four uprights, sodium lamp, Fresnel's Biprism, a convex lens and micrometer eyepiece.

To determine wavelength of sodium light using Newton's Rings.

Apparatus: Plano convex lens of large radius of curvature, o ptical arrangement for Newton's rings, plane glass plate, sodium vapour lamp and traveling microscope.

To determine wavelength of (1) Na source and (2) spectral lines of Hg source using plane diffraction grating.

Apparatus: Spectrometer, sprit level, prism, plane diffraction grating (~300 lines/mm), sodium vapour lamp, mercury vapour lamp, slit of adjustable width and fitted with a micrometer screw

Complete set to determine the elastic constants of a material by Searle's method.

Low and high Resistance box and Carey Foster's Bridge

Complete set to determine horizontal component of the earths magnetic field.

Complete set to determine the frequency of an electric tuning fork by Melde's experi-ment and verify

λ^2 – T Law law

Complete set for Newton's Rings experiment

Optics instruments

1. Complete set to determine the thickness of a thin paper by measuring the width of the interference

fringes produced by a wedge-shaped Film.

2. Complete set-up to determine Brewster's angle for air-glass interface using a prism.

3. Complete set-up to study of Fresnels law by the reflection on the surface of a prism.

4. Complete set-up to study the Malus law using a pair of polaroids.

5. Complete set-up to study the specific rotation of optically active solution using polarimeter.

6. Complete set-up for determination of wavelength and velocity of ultrasonic waves in a liquid

(kerosene, Xylene etc)..

7. Complete set-up to analyze elliptically polarized light by using babinate compensator.

8. Complete set-up to determine dispersive power and resolving

power of a plane diffraction grating.

Electrical Instruments

Digital Storage Oscilloscope (DSO) 1GHz Bandwidth

Function Generator FG01 SES Instruments

AC Millivolt meter

ACM102, ACM103 SES Instruments

Sigma DIGITAL LCR METER with Frequency 100Hz/1Khz/10KHz/100KHz

Complete set-up for determination of the coeffcient of thermal expansion of a metallic rod using an

optical lever.

Complete set for potentiometer and hot plate for calibration of thermocouple

Complete set to determine for calibration of thermocouple [one end at room temperature other end in

the oil bath] and determination of boiling point of water.

Complete set to determine the Temperature Coefficient of Resistance by Platinum Resistance

Thermometer (PRT).

Electronics Instruments

1. resistor, capacitor, inductor, 1K 10K pot, diode, zener, transistor pnp npn type, ic 7400 series

2. bread board and connecting wires

3. Construction of FF circuits using NAND gates.

4. Construction of 4 bit shift registers (serial & parallel)

using D type FFIC.

5. Construction of astable multivibrator using 555 Timer.

6. Complete set-up for measurement of Plank constant using LED

7. Complete set-up for determination of ionization potential of Mercury

8. Complete set-up determination of e/m by using bar magnet.

9. Complete set-up to study the photoelectric effect: variation of photocurrent versus inten-sity and wavelength of ligh

1. Complete set-up to determine the wavelength of H-alpha emission line of Hydrogen atom.

2. Complete set-up to show the tunneling effect in tunnel diode using I-V characteristics.

3.Complete set-up to determine (1) wavelength and (2) angular spread of He-Ne laser/ solid state laser

using plane diffraction grating.

4. Complete set-up to study PE hysteresis of ferroelectric crystal.

5. Complete set-up to study BH hysteresis of ferromagnetic material.

6. Complete set-up for measurement of susceptibility of paramagnetic solution by Quink"s tube method.

7. Complete set-up for measurement of magnetic susceptibility of solids.

8. Complete set-up for determination of variation of dielectric constant with frequency.

9. Complete set-up measurement of hall voltage by four probe method.

10. Complete set-up to study temperature coefficient of a semiconductor (NTC thermistor).

Electrical Instruments

1. Complete set-up to design an Amplitude Modulator using Transistor

2. Complete set-up to study envelope detector for demodulation of AM signal

3. Complete set-up to study FM - Generator and Detector circuit

4. Complete set-up to study AM Transmitter and Receiver

5. Complete set-up to study FM Transmitter and Receiver

6.Complete set-up to study Time Division Multiplexing (TDM)

7.Complete set-up to study Pulse Amplitude Modulation (PAM)

8.Complete Set-up for determination of pressure coefficient of air using Jolly's Apparatus

Serial Number	Name of the instrument	Specification	Quantity

Department of Chemistry (GGDC, Chapra)- Instruments List

1	Stalagmometer.		10
2	Viscometer.		10
3	Vacuum pump		3
4	Magnatic Stirrer with hot plate	Heating Capacity-150, External Dimension-200×225×185, Model- Q-19, Length- 9×25 mm	5
5	Magnatic Stirrer without hot plate	Heating Capacity-150, External Dimension-200×225×185, Model- Q-19, Length- 9×25 mm	5
6	Hot Air Oven copper	Temperature Range 5°C above ambient to 250°C maximum Temperature Accuracy + / - 2°C Temperature Uniformity + / - 1°C Controls PID Controller Temp Display LED Display Sensor PT-100 Heating Element Nichrome wire / Kanthal A1 Safety device Over temperature protection Electric leakage breaker Temperature safety as per DIN 12880 Class 3.1 Exterior Chamber MS powder coated Interior Chamber 304 stainless steel Insulation Mineral Wool Doors Solid doors w/ silicone rubber gasket & lock Shelves 2 – 3 Stainless steel shelves (Removable) Air Circulation Forced air circulation Power Supply 220 Volts, Inner Chember: 355 x 355 x 355 mm, Vol-45 lits	1
7	Heating mantle with energy regulator	100 ml capacity, Local Made; 250 ml capacity, Local Made; 500 ml capacity; 1000 ml capacity	2X4=8
8	U.V. Cabinet for TLC	IKON INDUSTRIES	2
9	Sonicator capacity and company name		2
10	pH meter with combined electrode	Readout: 4 digit LED display; Range: pH: 0 to 14.00, mV: 0 to ± 1.999; Resolution: pH: 0.1, mV: 1; ; Accuracy: pH: ± 0.02, pH ± 2 least count, mV: ± 0.2%, ± 1 least count; Temp. comp.: 0 to 100°C; Power required: 230 V AC ± 10% 50 Hz, 4 VA; Warming time: 5 minutes; Electronic buffer: Equivalent signal output of ideal electrode in solution	3
11	Conductivity meter	Readout: 4 digit LED display; Unit of meas.: MHO; Ranges: 0.01μΩ to 200 mΩ in 6	3

		ranges; Six ranges: 200 mΩ , 20mΩ , 2 mΩ , 200 μΩ , 20 μΩ , 2 μΩ; Accuracy: :± 1% ± last 2 digits; Power required: 230 V AC ± 10%, 50 Hz, 5 VA or 9V battery; Body: ABS; Dimension: 80 mm (H) x 235 mm (W) x 155 mm (L); Weight: 1kg (Approx.); Warming period: Instant; Standard cond.: Conductance of 1.000 mΩ; Electrode: Cell K = 1 - PVC sleeved (EQ-708A); Accessories: Stand set, Screwdriver and Dust proof cover	
12	Electrical melting point bath	Toshniwal	5
13	Potentiometer	Readout: 4 digit LED display; Ranges: ± 1.999 V; Accuracy :C 0o.0m0b1i nVeodl tPsV; SCt asnledeavrded C ell: 1.018 V inbuilt; Body: ABS; Stirrer Speed: 500 RPM fixed; Warming time: 5 minutes; Power: 230 V AC ±10% 50 Hz; Weight: 1 Kg (approx); Dimension: 90 mm (H) x 225 mm (W) x 220 mm (L); Accessories: Electrode clamp, Rod, Teflon magnet, Screwdriver and Dust proof cover	3
14	Shimadzu UV-VIS-Double Beam Spectrophotometer	Model no. 2206, Wavelength: 190-1100nm; photometric: +/-3.0 Abs	2
15	Vacuum pump	Specification (220V, 50Hz) ◆ Max. power： 90 W ◆ Max. current：0.5 A ◆ Max. vacuum：Ultimate 13mbar (-750mmHg) ◆ Max. flow rate： 18 l/min ◆ Max. vacuum： 1450 RPM ◆ Horse power： 1/6 HP ◆ Noise level： 50.0 dB ◆ Hose barb： 5/16 inch (8 mm) ◆ Net weight： 7.4 kg ◆ Dimension (LxWxH)：26.2x23.6x19.3 cm ◆ Glass vapor trap：Yes ◆ Vacuum Regulator：Yes	3
16	Glass dessicator Bigger size		3

17	Water bath electrical	6 holes, Stainless steel with water inlet & outlet	2
18	Tarson desiccators	Dia: 6 inch and 12 inch	3x2=6
19	Digital Colorimeter	Reads: 650A - % T & OD / 653 - OD; Power required: 230 V AC ± 10% 50 Hz, 10 VA; Filters: Disc mounted German filters 400, 420, 470, 500, 530, 620, 660, & 700 nm. All the eight filters are mounted on the disc. Selection is done by rotation of disc. The disc will be locked in desired position; Readout: 3 digit LCD display; Measurement: a) Transmittance 'T'-0-100% b) OD-0-1.99 (653 reads OD only); Accuracy: %T – ± 1% - OD – ± 0.01; Light Source: LED of infinite life; Detector: Photo to cell; Warming time: 5 minutes; Cuvette: Square cuvette 10 mm path length opti glass window; Body: ABS; Weight: 1 Kg. (approx); Dimension: 90 mm (H) x 225 mm (W) x 220 mm (L); Sample quantity: 1ml; Accessories: Square cuvette, Dust proof cover	2
20	Mechanical shaker	12 pegs Local made	1
21	Digital polarimeter	Readout: 5 digit LED display for measurement; Angle of rotation: ±120° (- for levo, + for dextro); Resolution: 0.01°; Accuracy: 0.02°; PC Software: EZCRUZ - 16 POL; 21CFR: Provided; IQ, OQ, PQ: Provided; Calibration: Factory calibrated with degree Or international sugar scale as Perusers choice using shimadzu standard; Light Detection: Electronic sensor; Power: 230V AC ±10% @ 50 Hz 7VA; Weight: 7 kg approx; Size: 180mm (H) x 325mm (D) x 485mm (L); Sample Tube: Glass teflon tube of 20cm for organic solution; Accessories: Glass teflon tube of 20cm for organic solution	1
22	Micro oven	SAMSUNG	1
23	Electronic Weighing Balance	Weighing capacity 220 g; probability 1 mg, wenser/ Satorious	1
24	Boiling point bath (25 ml)	Glass made, with receiver bulb	5
25	Ice-making machine (double door)	Hitachi or LG or Godrej	1
26	Blowpipe		5

Department of Chemistry (GGDC, Chapra)- Chemical & Glass apparatus

Serial Number	Name of the Chemical	Company name	Quantity
1	Iodine	Merck/spectrochem/ SRL	
2	Vitamin c (ascorbic acid)	Merck/spectrochem/ SRL	
3	Bismuth nitrate	Merck/spectrochem/ SRL	
4	Tetrahydrofuran 500 ml	Merck/spectrochem/ SRL	
5	Potassium iodide	Merck/spectrochem/ SRL	
6	Potassium chloride	Merck/spectrochem/ SRL	
7	Sodium phosphate	Merck/spectrochem/ SRL	
8	Lead sulphate	Merck/spectrochem/ SRL	
9	Barium sulphate	Merck/spectrochem/ SRL	
10	Calcium sulphate	Merck/spectrochem/ SRL	
11	Boric acid	Merck/spectrochem/ SRL	
12	Nickel bromide	Merck/spectrochem/ SRL	
13	Ferric oxide	Merck/spectrochem/ SRL	
14	Manganese dioxide	Merck/spectrochem/ SRL	
15	Ferric chloride	Merck/spectrochem/ SRL	
16	Ammonium chloride	Merck/spectrochem/ SRL	
17	Manganese sulphate	Merck/spectrochem/ SRL	
18	Chromic oxide	Merck/spectrochem/ SRL	
19	Barium bromide	Merck/spectrochem/ SRL	
20	Sodium nitrite	Merck/spectrochem/ SRL	
21	Strontium sulphate	Merck/spectrochem/ SRL	
22	Calcium phosphate	Merck/spectrochem/ SRL	
23	Copper nitrate	Merck/spectrochem/ SRL	
24	Ethanol	Merck/spectrochem/ SRL	
25	Methanol	Merck/spectrochem/ SRL	

26	Acetone	Merck/spectrochem/ SRL	
27	Acetyl acetone	Merck/spectrochem/ SRL	
28	Sodium bismuthate	Merck/spectrochem/ SRL	
29	Ethyl acetate 500 ml	Merck/spectrochem/ SRL	
30	Hexane 500 ml	Merck/spectrochem/ SRL	
31	Acetonitrile 500 ml	Merck/spectrochem/ SRL	
32	Diethyl ether 500 ml	Merck/spectrochem/ SRL	
33	DMSO 500 ml	Merck/spectrochem/ SRL	
34	DMF	Merck/spectrochem/ SRL	
35	Samarium iodide	Merck/spectrochem/ SRL	
36	Benzene 500 ml	Merck/spectrochem/ SRL	
37	Toluene 500 ml	Merck/spectrochem/ SRL	
38	Xylene 500 ml	Merck/spectrochem/ SRL	
39	Barium nitrate	Merck/spectrochem/ SRL	
40	Calcium nitrate	Merck/spectrochem/ SRL	
41	Strontium nitrate	Merck/spectrochem/ SRL	
42	Silver nitrate	Merck/spectrochem/ SRL	
43	Pt wire		
44	Mercury	Merck/spectrochem/ SRL	
45	Anhydrous sodium suphate	Merck/spectrochem/ SRL	
46	Anhydrous magnesium suphate	Merck/spectrochem/ SRL	
47	Urea	Merck/spectrochem/ SRL	
48	Benzyl amine	Merck/spectrochem/ SRL	
49	Allyl amine	Merck/spectrochem/ SRL	
50	Cadmium sulphide	Merck/spectrochem/ SRL	
51	Cobalt chloride	Merck/spectrochem/ SRL	

52	Cobalt bromide	Merck/spectrochem/ SRL	
53	Nickel bromide	Merck/spectrochem/ SRL	
54	Zinc sulphide	Merck/spectrochem/ SRL	
55	Sodium periodate	Merck/spectrochem/ SRL	
56	Potassium bromate	Merck/spectrochem/ SRL	
57	Sodium iodide	Merck/spectrochem/ SRL	
58	D-manitol	Merck/spectrochem/ SRL	
59	D-glucose	Merck/spectrochem/ SRL	
60	D-manose	Merck/spectrochem/ SRL	
61	Bromine	Merck/spectrochem/ SRL	
62	Cinamic acid	Merck/spectrochem/ SRL	
63	m-dinitro benzene	Merck/spectrochem/ SRL	
64	p-nitro benzoic acid	Merck/spectrochem/ SRL	
65	p-chloro benzoic acid	Merck/spectrochem/ SRL	
66	p-amino benzoic acid	Merck/spectrochem/ SRL	
67	Thalic acid	Merck/spectrochem/ SRL	
68	Salicylic acid	Merck/spectrochem/ SRL	
69	Sulphonilic acid	Merck/spectrochem/ SRL	
70	Potassium permanganate	Merck/spectrochem/ SRL	
71	Potassium dichromate	Merck/spectrochem/ SRL	
72	Oxalic acid	Merck/spectrochem/ SRL	
73	Sodium thiosulphate	Merck/spectrochem/ SRL	
74	Starch		
75	Phenolpthalein	Merck/spectrochem/ SRL	
76	BADS	Merck/spectrochem/ SRL	
77	Methyl orange	Merck/spectrochem/ SRL	
78	Glacial acetic acid	Merck/spectrochem/ SRL	
79	EDTA	Merck/spectrochem/ SRL	
80	Copper sulphate	Merck/spectrochem/ SRL	

81	Ferrous sulphate	Merck/spectrochem/ SRL	
82	Ferric chloride	Merck/spectrochem/ SRL	
83	DMG	Merck/spectrochem/ SRL	
84	Ammonium hydroxide	Merck/spectrochem/ SRL	
85	Potasium ferrocyanide	Merck/spectrochem/ SRL	
86	Alpha napthyl amine	Merck/spectrochem/ SRL	
87	Sulphanilic acid	Merck/spectrochem/ SRL	
88	Beta napthol	Merck/spectrochem/ SRL	
89	Lead acetate	Merck/spectrochem/ SRL	
90	P^H paper		
91	Potasium chromate	Merck/spectrochem/ SRL	
92	Charcoal block	Merck/spectrochem/ SRL	
93	Cobalt nitrate	Merck/spectrochem/ SRL	
94	Blow pipe		
95	Mica foil		
96	Ferrous sulphide	Merck/spectrochem/ SRL	
97	Sodium sulphide	Merck/spectrochem/ SRL	
98	Methylene blue	Merck/spectrochem/ SRL	
99	Diphenyl amine	Merck/spectrochem/ SRL	
100	Ferroin	Merck/spectrochem/ SRL	
101	Glycerol	Merck/spectrochem/ SRL	
102	Methyl red	Merck/spectrochem/ SRL	
103	Borax	Merck/spectrochem/ SRL	
104	Zinc chloride	Merck/spectrochem/ SRL	
105	Zinc dust	Merck/spectrochem/ SRL	
106	Copper turning	Merck/spectrochem/ SRL	
107	Lead nitrate	Merck/spectrochem/ SRL	
108	$ZnSO_4.7H_2O$	Merck/spectrochem/ SRL	
109	Phosphorous pentachloride	Merck/spectrochem/ SRL	

110	$MgSO_4.7H_2O$	Merck/spectrochem/ SRL	
111	Calcium fluoride	Merck/spectrochem/ SRL	
112	Syrupy phosphoric acid	Merck/spectrochem/ SRL	
113	Sodium nitropruside	Merck/spectrochem/ SRL	
114	Disodium hydrogen phophate	Merck/spectrochem/ SRL	
115	Ammonium thiocyanate	Merck/spectrochem/ SRL	
116	Ammonium molybdate	Merck/spectrochem/ SRL	
117	Mercurous nitrate	Merck/spectrochem/ SRL	
118	Nessler reagent	Merck/spectrochem/ SRL	
119	Potassium thiocyanate	Merck/spectrochem/ SRL	
120	Stannous chloride	Merck/spectrochem/ SRL	
121	Sodium bicarbonate	Merck/spectrochem/ SRL	
122	Mohr salt	Merck/spectrochem/ SRL	
123	Phenol	Merck/spectrochem/ SRL	
124	Sodium chloride	Merck/spectrochem/ SRL	
125	2,4-DNP	Merck/spectrochem/ SRL	
126	Sodium bisulphite	Merck/spectrochem/ SRL	
127	Semicarbazide hydrochloride	Merck/spectrochem/ SRL	
128	Chloroform 500 ml	Merck/spectrochem/ SRL	
129	Dichloromethane 500 ml	Merck/spectrochem/ SRL	
130	Hydroxyl amine hydrochloride	Merck/spectrochem/ SRL	
131	Picric acid	Merck/spectrochem/ SRL	
132	Naphthalene	Merck/spectrochem/ SRL	
133	Anthracene	Merck/spectrochem/ SRL	
134	Phenanthrene	Merck/spectrochem/ SRL	
135	Aniline	Merck/spectrochem/ SRL	
136	Benzoyl chloride	Merck/spectrochem/ SRL	
137	PCl_5	Merck/spectrochem/ SRL	

138	3,5-dinitro benzoic acid	Merck/spectrochem/ SRL	
139	m-nitro phenol	Merck/spectrochem/ SRL	
140	Benzoic acid	Merck/spectrochem/ SRL	
141	Resorcinol	Merck/spectrochem/ SRL	
142	Acetophenone	Merck/spectrochem/ SRL	
143	Benzophenone	Merck/spectrochem/ SRL	
144	Formaldehyde	Merck/spectrochem/ SRL	
145	Benzaldehyde	Merck/spectrochem/ SRL	
146	Nitrobenzene	Merck/spectrochem/ SRL	
147	Cylohexene	Merck/spectrochem/ SRL	
148	Benzoin	Merck/spectrochem/ SRL	
149	Benzophenone	Merck/spectrochem/ SRL	
150	Sodium bromide	Merck/spectrochem/ SRL	
151	Sodium iodide	Merck/spectrochem/ SRL	
152	Methyl acetate	Merck/spectrochem/ SRL	
153	Sodium nitrite	Merck/spectrochem/ SRL	
154	Calcium phosphate	Merck/spectrochem/ SRL	
155	Sodium arsenate	Merck/spectrochem/ SRL	
156	Ammonium chloride	Merck/spectrochem/ SRL	
157	Sodium nitrate	Merck/spectrochem/ SRL	
158	EBT	Merck/spectrochem/ SRL	
159	Murexide	Merck/spectrochem/ SRL	
160	Calcon	Merck/spectrochem/ SRL	
161	Potassium nitrate	Merck/spectrochem/ SRL	
162	Magnesium chloride	Merck/spectrochem/ SRL	
163	Magnesium sulphate	Merck/spectrochem/ SRL	
164	Zinc sulphate	Merck/spectrochem/ SRL	
165	Hydrogen peroxide	Merck/spectrochem/ SRL	
166	Potassium chromate	Merck/spectrochem/ SRL	

167	Sodium oxalate	Merck/spectrochem/ SRL	
168	Potassium hydrogen tartatate	Merck/spectrochem/ SRL	
169	Sodium carbonate	Merck/spectrochem/ SRL	
170	Ammonium bifluoride	Merck/spectrochem/ SRL	
171	Ammonium carbonate	Merck/spectrochem/ SRL	
172	Bleaching powder	Merck/spectrochem/ SRL	
173	Sulphuric acid	Merck/spectrochem/ SRL	
174	Potassium hydrogen phthalate	Merck/spectrochem/ SRL	
175	Sodium hydroxide	Merck/spectrochem/ SRL	
176	Commercial vinegar	Merck/spectrochem/ SRL	
177	Potassium hydroxide	Merck/spectrochem/ SRL	
178	Carbon tetrachloride	Merck/spectrochem/ SRL	
179	Ethyl acetate	Merck/spectrochem/ SRL	
180	Ammonium molybdate	Merck/spectrochem/ SRL	
181	Sodium acetate	Merck/spectrochem/ SRL	
182	Ammonium nitrate	Merck/spectrochem/ SRL	
183	Aluminium oxide	Merck/spectrochem/ SRL	
184	Zinc oxide	Merck/spectrochem/ SRL	
185	Calcium oxide	Merck/spectrochem/ SRL	
186	Disodium hydrogen phosphate	Merck/spectrochem/ SRL	
187	Disodium hydrogen arsenate	Merck/spectrochem/ SRL	
188	Antimony oxide	Merck/spectrochem/ SRL	
189	Strontium nitrate	Merck/spectrochem/ SRL	
190	Stannic oxide	Merck/spectrochem/ SRL	
191	Sodium arsenite	Merck/spectrochem/ SRL	
192	Nickel chloride	Merck/spectrochem/ SRL	
193	Nickel oxide	Merck/spectrochem/ SRL	
194	Cobalt oxide	Merck/spectrochem/ SRL	

195	Dimethyl sulphoxide	Merck/spectrochem/ SRL	
196	Propanol	Merck/spectrochem/ SRL	
197	Tertiary butanol	Merck/spectrochem/ SRL	
198	n-hexane	Merck/spectrochem/ SRL	
199	n-pentane	Merck/spectrochem/ SRL	
200	Phosphorous pentoxide	Merck/spectrochem/ SRL	

Serial Number	Name of the glass apparatus	Quantity	Price
1	Graduated pipettes 10 ml and 25 ml BOROSIL	10 PCS EACH	
2	Burettes 50 ml BOROSIL	20 PCS	
3	Beakers 25 ml, 100 ml, 250 ml, 500 ml BOROSIL	10 PCS EACH	
4	Volumetric flasks. 50, 100 and 250 ml BOROSIL	10 PCS EACH	
5	Condensers B-14, 19,24 BOROSIL	10 PCS EACH	
6	Head - B-14-14, B-19-19, B-24-24 and Tail- B-14-14, B-19-19, B-24-24	10 PCS EACH	
7	Funnels Small size and medium sizw	10 PCS EACH	
8	Petri dishes	10 PCS	
9	Graduated Cylinders/Measuring cylinder	10 PCS EACH	