

Contents

Preface	v
Syllabus	vii
1. Quality Control of Drug and Pharmaceuticals	1-14
Importance of Quality Control	1
Indian pharmacopoeia	1
Minimization of Errors	2
Sources of Impurities in Pharmaceuticals	3
Permissible Impurities	5
Quantitative Analysis	5
Limit test for Chloride	6
Limit test for Sulphate	6
Limit test for Iron	7
Limit test for Lead	8
Limit test for Heavy Metals	9
Limit test for Arsenic	11
Quantitative Analysis	12
Acidimetry Alkalimetry	13
Oxidation Reduction (Redox Type)	13
Precipitation	13
Complexometric	13
Gravimetry	13
Primary Standard	14
Secondary Standard	14
2. Common Inorganic Pharmaceutical Compounds	15-94
(a) Acids and Bases	15-30
Concepts of acids and bases	15
Boric acid	21
Hydrochloric acid	23
Strong ammonium hydroxide (Ammonia)	24
Calcium hydroxide	25

x Pharmaceutical Chemistry-I

	Sodium hydroxide 26	
	Buffers 28	
(b)	Anti-oxidants	30-37
	Hypo Phosphorous acid 31	
	Sulphur dioxide 32	
	Sodium bisulphite 33	
	Sodium metabisulphite 33	
	Sodium thiosulphate 34	
	Nitrogen 36	
(c)	Gastro-Intestinal Agents	37-50
	i. Acidifying Agents	37-38
	Dilute hydrochloric acid 38	
	ii. Antacids	39-47
	Ideal characteristic 40	
	Combined antacid 40	
	Sodium bicarbonate 41	
	Aluminium hydroxide 42	
	Aluminium phosphate 43	
	Calcium carbonate 44	
	Magnesium carbonate 45	
	Magnesium trisilicate 46	
	Magnesium oxide 47	
	iii. Protectives and Adsorbents	47-49
	Bismuth subcarbonte 48	
	Kaolin 49	
	iv. Saline Cathartics	49-51
	Sodium potassium tartrate 50	
	Magnesium sulphate 50	
(d)	Topical Agents :	51-78
	(i) Protectives	52-56
	Talc 52	
	Zinc oxide 53	
	Calamine 54	
	Zinc stearate 54	
	Titanium dioxide 55	
	Silicone polymers 56	
	(ii) Antimicrobials and Astringents	57-75
	Hydrogen peroxide 59	
	Potassium permanganate 62	
	Chlorinated lime 63	
	Iodine 65	
	Solutions of iodine 66	
	Povidone iodine 68	

	Boric acid 68	
	Borax 70	
	Silver nitrate 71	
	Mild silver protein 72	
	Mercury 73	
	Yellow mercuric oxide 74	
	Ammoniated mercury 74	
(iii)	Sulphur and its Compounds	75-77
	Precipitated sulphur 75	
	Sublimed sulphur 76	
	Selenium sulphide 76	
(iv)	Astringents	77-78
	Alum 77	
	Zinc Sulphate 78	
(e)	Dental Products	79-85
	Anticaries 79	
	Sodium fluoride 80	
	Stannous fluoride 80	
	Dentifrices 81	
	Calcium carbonate 82	
	Sodium metaphosphate 83	
	Dicalcium phosphate 83	
	Strontium chloride 84	
	Zinc chloride 84	
(f)	Inhalants	85-89
	Oxygen 87	
	Carbon dioxide 88	
	Nitrous oxide 89	
(g)	Respiratory Stimulants	89-90
	Ammonium Carbonate 89	
(h)	Expectorants and Emetics	90-92
	Ammonium chloride 90	
	Potassium iodide 91	
	Antimony potassium tartrate 92	
(i)	Antidotes	92-94
	Sodium nitrite 93	
3.	Inorganic official Compounds of Iron Iodine and Calcium	95-100
	Iron 95	
	Ferrous fumarate 95	
	Ferrous gluconate 96	
	Ferrous Sulphate 96	
	Calcium 97	
	Calcium chloride 98	
	Calcium gluconate 98	

xii Pharmaceutical Chemistry-I

Calcium lactate 99
Calcium pentothenate 99
Iodine 99

4. Major Intra and Extracellular Electrolytes	101-111
Major physiological anions 103	
Major physiological cations 103	
Sodium chloride and its preparations 104	
Potassium chloride and its preparations 105	
Sodium acetate 107	
Potassium acetate 108	
Sodium bicarbonate 108	
Sodium citrate 108	
Sodium lactate injection 110	
Ammonium chloride and its injection 110	
5. Radiopharmaceuticals and Contrast Media	112-121
Definitions 112	
Radioactivity-Alpha, Beta and Gamma Radiations 113	
Biological Effects of Radiation 113	
Measurement of Radiations 114	
G.M. Counter 115	
Handling and storage 118	
Radioisotopes and their uses 119	
Radio opaque/Contrast Media 121	
Barium sulphate 121	
6. Identification Tests for Anions and Cations as per Indian Pharmacopoeia	122-140
Appendix	141-144
Index	145-148