Contents

Preface *v*
List of Contributors *vi*
Syllabus *xi*

Chapter 1: Definition, History, and Scope of Pharmacognosy **1**
1.1 Origin of Pharmacognosy *1*
1.2 History of Pharmacognosy *1*
1.3 Scope of Pharmacognosy *2*

Chapter 2: Classification of Drugs **5**
2.1 Alphabetical Classification *5*
2.2 Taxonomical (Biological) Classification *5*
2.3 Morphological Classification *6*
2.4 Pharmacological Classification *7*
2.5 Chemical Classification *7*
2.6 Chemotaxonomic Classification *8*

Chapter 3: Quality Control of Crude Drugs **10**
3.1 Different Methods of Adulteration of Crude Drugs *10*
3.2 Evaluation of Crude Drugs *11*
3.2.1 Organoleptic Evaluation *12*
3.2.2 Microscopic Evaluation *12*
3.2.3 Chemical Evaluation *14*
3.2.4 Physical Evaluation *15*
3.2.5 Biological Evaluation *15*

Chapter 4: Secondary Metabolism **17**
4.1 Alkaloids *17*
4.2 Glycosides *21*
4.3 Volatile Oils *24*
4.4 Terpenoids *27*
4.5 Tannins *28*
4.6 Resins *31*

Chapter 5: Crude Drugs **35**
5.1 Laxatives *35*
5.1.1 Aloe *35*
5.1.2 Castor oil *37*
5.1.3 Ispaghula *38*
5.1.4 Senna *39*
5.2 Cardiotonic *41*
5.2.1 Digitalis *41*
5.2.2 Arjuna *42*
5.3 Carminatives and GI Regulators *43*
5.3.1 Coriander *43*
5.3.2 Fennel *44*

5.3.3 Cardamom *45*
5.3.4 Ginger *47*
5.3.5 Clove *48*
5.3.6 Black Pepper *49*
5.3.7 Asafoetida *51*
5.3.8 Nutmeg *52*
5.3.9 Cinnamon *53*
5.4 Astringents *54*
5.4.1 Myrobalan *54*
5.4.2 Black Catechu *55*
5.4.3 Pale Catechu *56*
5.5 Drugs Acting on the Nervous System *57*
5.5.1 Hyoscyamus *57*
5.5.2 Belladonna *59*
5.5.3 Ephedra *60*
5.5.4 Opium *62*
5.5.5 Tea Leaves *63*
5.5.6 Coffee Seeds *65*
5.5.7 Coca *66*
5.6 Anti-Hypertensive *67*
5.6.1 Rauwolfia *67*
5.7 Anti-Tussive *69*
5.7.1 Vasaka *69*
5.7.2 Tolu Balsam *69*
5.8 Anti-Rheumatics *70*
5.8.1 Colchicum Seed *70*
5.9 Anti-Tumour *72*
5.9.1 Vinca *72*
5.9.2 Podophyllum *73*
5.10 Antidiabetics *74*
5.10.1 Pterocarpus *74*
5.10.2 Gymnema *75*
5.11 Diuretics *76*
5.11.1 Gokhru *76*
5.11.2 Punarnava *77*
5.12 Anti-dysenteric *77*
5.12.1 Ipecacuanha *77*
5.13 Antiseptics and Disinfectants *78*
5.13.1 Benzoin *78*
5.13.2 Myrrh *80*
5.13.3 Neem *81*
5.13.4 Turmeric *82*
5.14 Antimalarials *83*
5.14.1 Cinchona *83*
5.14.2 Artemisia *84*
5.15 Oxytocic *85*
5.15.1 Ergot *85*
5.16 Vitamins *86*
5.16.1 Cod liver oil *86*
5.16.2 Shark liver oil *87*

5.17 Enzymes *89*
5.17.1 Papaya *89*
5.17.2 Diastase *89*
5.17.3 Pancreatin *90*
5.17.4 Yeast *90*
5.18 Pharmaceutical Aids *91*
5.18.1 Kaolin *91*
5.18.2 Lanolin *92*
5.18.3 Beeswax *92*
5.18.4 Acacia *93*
5.18.5 Tragacanth *94*
5.18.6 Sodium Alginate *95*
5.18.7 Agar *97*
5.18.8 Guar Gum *99*
5.18.9 Gelatine *100*
5.19 Miscellaneous *101*
5.19.1 Squill *101*
5.19.2 Galls *102*
5.19.3 Ashwagandha *103*
5.19.4 Tulsi *103*
5.19.5 Guggul *104*

Chapter 6: Plant Fibres Used as Surgical Dressings 106
6.1 Absorbent Cotton *107*
6.2 Silk *108*
6.3 Wool *109*
6.4 Regenerated Fibres *111*
6.4.1 Viscose *111*
6.5 Surgical Dressing *112*
6.6 Sutures and Ligatures *112*
6.7 Surgical Catgut *114*

Chapter 7: Traditional System of Medicine 116
7.1 Traditional System of Medicine *116*
7.1.1 Ayurveda *116*
7.1.2 Siddha *118*
7.1.3 Unani *119*
7.1.4 Homoeopathy *121*
7.2 Method of Preparation of Ayurvedic Formulation *121*
7.2.1 Asava and Arista *121*
7.2.2 Gutika *122*
7.2.3 Taila *123*
7.2.4 Churna *123*
7.2.5 Avaleha or Lehya *124*
7.2.6 Bhasma *124*

Chapter 8: Role of Medicinal and Aromatic Plants in the National Economy and their Export Potential 127
8.1 Medicinal and Aromatic Plants (MAPs) *127*

Chapter 9: Herbs as Health Food **132**
9.1 Nutraceuticals *132*
9.2 Antioxidants *133*
9.3 Probiotics *134*
9.4 Prebiotics *134*
9.5 Dietary Fiber *134*
9.6 Omega-3-Fatty Acid *134*
9.7 Spirulina *136*
9.8 Soybean *137*
9.9 Carotenoids *138*
9.10 Garlic *140*

Chapter 10: Introduction of Herbal Formulations **143**
10.1 Syrup *143*
10.2 Tablet *145*
10.3 Novel Dosage Form *147*
10.3.1 Liposomes *148*
10.3.2 Phytosome *148*
10.3.3 Niosomes *149*
10.3.4 Nanoparticle *149*
10.3.5 Emulsion *149*

Chapter 11: Herbal Cosmetics **152**
11.1 Aloe Vera Gel *152*
11.2 Almond Oil *153*
11.3 Lavender Oil *155*
11.4 Olive Oil *156*
11.5 Rosemary Oil *157*
11.6 Sandalwood Oil *158*

Chapter 12: Phytochemical Investigation of Drugs **161**
12.1 Extraction of Drugs *161*
12.2 Isolation and Purification, and Identification of Drugs *167*
12.3 Chromatography *169*
12.4 Electrophoresis *171*

Practical **173**
1. Morphological Identification of Drugs *173*
   Ispaghula, Senna, Coriander, Fennel, Cardamom, Ginger, Nutmeg, Black Pepper, Cinnamon, Clove, Ephedra, Rauwolfia, Gokhru, Punamava, Cinchona, Agar.
2. Gross Anatomical Studies Transverse Section (TS) of the Drugs *179*
   Ajwain, Datura, Cinnamon, Cinchona, Coriander, Ashwagandha, Liquorice, Clove, Curcuma, Nux-vomica, Vasaka
3. Physical and Chemical Tests for Evaluation of Drugs *185*
   Asafoetida, Benzoin, Pale catechu, Black catechu, Castor oil, Acacia, Tragacanth, Agar, Guar gum, Gelatine

Index **191**