CHAPTER 1

History and Scope of Pharmacognosy

1. **Pharmacognosy:** Pharmacognosy is defined as a systematic and scientific study of structural, physical, chemical and biological characters of crude drugs including the study of their history, cultivation, collection and preparation for market.
2. **Laxatives/purgatives:** The drugs which promote defaecation are called laxatives, e.g. castor oil, senna, rhubarb, aloes, ispaghula.
3. **Cardiotonics:** The drugs which increase the force of cardiac muscles and stimulate the activity of heart are called cardiotonics, e.g. digitalis, arjuna.
4. **Carminatives:** The drugs which expel the gases from GIT by increasing peristalsis are called carminatives, e.g. fennel, coriander, cardamom, ginger, clove, cinnamon, clove.
5. **Astringents:** The drugs which cause precipitation of superficial proteins are called astringents, e.g. black catechu, pale catechu.
6. **Analeptics:** The drugs which stimulate the central nervous system are known as analeptics or CNS stimulant, e.g. nux vomica, lobeline.
7. **Antihypertensives:** The drugs which reduce elevated blood pressure to the normal level are called antihypertensive, e.g. rauwolfia.
8. **Antitussives:** The drugs which are used in the treatment of cough are called antitussives/anticough agents, e.g. vasaka, tulsi, tolu balsam.
9. **Antirheumatics:** The drugs which are used in the treatment of rheumatism are called antirheumatics, e.g. guggul, colchicum.
10. **Antitumour/anticancer agents:** The drugs which are used in the treatment of cancer are called anticancer agents/drugs, e.g. vinca.

11. **Antileprotics:** The drugs which are used in the treatment of leprosy are called antileprotic drugs, e.g. chaulmoogra oil.
12. **Antidiabetics/hypoglycemic agents:** The drugs which are used in the treatment of diabetes mellitus are known as antidiabetic drugs, e.g. gymnema, pterocaprus.
13. **Diuretics:** The drugs which increase the formation and excretion of urine are called diuretics, e.g. gokharu, punarnava.
14. **Antiseptics:** The drugs which kill the microbes when applied to living tissues are called antiseptics, e.g. benzoin, neem, myrrh, curcuma, turmeric.
15. **Disinfectants:** The drugs which kill the bacteria and their spore when applied to nonliving tissue are called disinfectants, e.g. benzoin, myrrh, neem, curcuma, turmeric.
16. **Antimalarials:** The drugs which are used in the treatment of malaria are called antimalarial agents, e.g. cinchona.
17. **Oxytocics/Ecbolics:** The drugs which stimulate the uterine contraction and expel the contents of uterus are called oxytocics, e.g. ergot.
18. **Vitamin:** Vitamins are organic substances present in small amounts in natural foodstuffs and are essential for growth of body and normal metabolism, e.g. shark liver oil (vitamin A), amla (vitamin C).
19. **Enzymes:** Enzymes are the protein substances which catalyse various biochemical reactions, e.g. papain, diastase, yeast.
20. **Perfumes:** These are the substances made from natural or synthetic materials which are used for creating a pleasant odour, e.g. rose, jasmine, sandalwood, citronella.
21. **Flavouring agents:** These are the agents used to give a pleasant flavour to the formulation, e.g. peppermint oil, lemon oil, orange oil, lemon grass oil.
22. **Pharmaceutical aids:** The substances which are of little or no therapeutic value but are essentially used in the manufacture of or compounding of various pharmaceutical products are known as pharmaceutical aids, e.g. honey, starch, acacia, gelatin.
23. **Crude drug:** It means the drugs occurring in natural forms.
24. **Source of crude drug:** Crude drugs are obtained from plant, animals or minerals which are known as source of crude drugs.

25. **Organised drugs:** The drugs which have a definite cellular structures are called organised drugs, e.g. fennel, cinchona.
26. **Unorganised drugs:** The drugs which do not show a definite cellular structure are called unorganised drugs, e.g. acacia, tragacanth.
27. **Aphrodisiac:** The agents which stimulate the sexual desire are called aphrodisiacs, e.g. gokharu.
28. **Technical products:** The drugs from natural sources which are used in the industries like food industries are called technical products, e.g. ginger, cardamom, caraway.
29. **Technical use:** The use of drug other than pharmacological use is called technical use.
30. **Substitute:** Substitutes are the drugs having less percentage of active constituents and are added to the genuine drug.
31. **Adulterants:** Adulterants are the substances purposefully added in original drug to increase profit in marketing and they look similar to original drug but do not contain any active chemical constituent.
32. **Barks:** Barks are the external tissues of stem.
33. **Fracture:** The transverse broken surface of the bark is known as fracture.
34. **Balsams:** The oleoresins which contain benzoic acid or cinnamic acids are termed balsams, e.g. balsam of Tolu, balsam of Peru, storax, benzoin.
35. **Sialogogue:** The drugs which increase the secretion of saliva are called sialogogue, e.g. tobacco.
36. **Galactogogue:** The drug which increases the secretion of milk are called galactogogue, e.g. shatavari.
37. **Cholagogue:** The drug which increases secretion of bile, e.g. turmeric.
38. **Hydrogogue:** The drugs which promote watery evacuation of the bowel are called hydrogogue, e.g. jalap, calomel.
39. **Emmenagogue:** The substances which stimulate the menstrual flow are called emmenagogue.
40. **Stomachics:** The substances which increase the secretion of gastric juice and the functional activity of stomach are called stomachics, e.g. dill, fennel, coriander, gentian.

Q 1. How following scientists contributed in development of pharmacognosy?

1. **Galen**
- He was a Greek scientist.
- He found method of extraction.
- He developed "galenical pharmacy".
- Galenicals prepared are decoction, infusion.

2. Seydler
- Seydler coined the term pharmacognosy
- He was a German scientist.
- He wrote the book *Pharmacognostica Gignostica.*
- When he was a student, he published his thesis on "Sarspirella". The title of this thesis was "Analecta Pharmacognostica".
- He introduced the term "pharmacognosy" from two words:
- 'Pharmakon' means a drug
- 'Gnosis' means knowledge of.
- He explained the term as "knowledge of drugs".

3. Dioscoride
- He was a Greek physician.
- He described several plants of medicinal importance.
- His book is *De Materia Medica*.
- *Materia medica* is the text in which all natural products utilized by physicians were compiled together to form materia medica giving their detailed information.

4. Hippocrates
- He was a Greek physician.
- He is known as "father of medicine".
- He has contributed to pharmacognosy by his study on "anatomy and physiology of human beings".

5. Aristotle
- He was a Greek philosopher.
- He explained his theory as the "Origin of Universe", the sun and earth.
- He studied the animal kingdom.
- He suggested the principle of classification of animals.

6. Sushruta

- He was an Indian surgeon and physician.
- He knew about 1500 drugs.
- He used to operate GIT.
- His collection is named "Sushruta Samhita".

7. Charak

- He was an Indian physician.
- He knew about 700 drugs.
- The drugs were obtained from plants and minerals.
- His collection is named "Charak Samhita."

Scientists	*Contribution*
i. Galen	Extraction method
ii. Seydler	"Pharmacognostica Gignostica"
iii. Dioscoride	"De Materia Medica"
iv. Hippocrate	"Father of Medicine"
v. Aristotle	"Animal kingdom"/classification of animals.

Q 2. Give the scope of pharmacognosy. Explain history of pharmacognosy.

Scope of Pharmacognosy

- To provide knowledge of the natural plant and animal drugs.
- To provide knowledge of active constituents of drugs.
- To understand identification, extraction, purification, standardization and formulation of drugs.
- To find out adulteration in the drugs.
- Knowledge of pharmacognosy is useful in production of spices, cereals, paper, fabrics, paints, and also Bekari productions.

History of Pharmacognosy

- In Papyrus Ebers, an old documents, written in 1500 BC, Egyptions were aware of medicinal uses of several plants and animals and human anatomy also.
- The great Greek physician "Hippocrates" known "father of medicine" studied the human anatomy and physiology.
- Aristotle philosopher is well known for his studies on "animal kingdom".

- Theophrastus is well known for study on "plant kingdom".
- Dioscoride, a Greek physician, described several plants of medicinal importance in "De Materia Medica".
- Galen, a Greek scientist, described the method of extraction of active constituent of crude drugs.
- Seydler, a German scientist, coined the term pharmacognosy in 1815 in his work entitled "Analecta Pharmacognostica".

Q3. Write a note on "present status and future prospects of pharmacognosy."

- Pharmacognosy is concerned with the study of crude drugs of vegetable and animal origins.
- Plants are still a potent source of therapeutic agents.
- Now the people have realized the utility of drugs from natural origin which are not only economical but also very safer too and also easily available.
- All over the world the demand of herbal drug is increased tremendously.
- About 80% of the world population depends on crude drugs.
- Medicinal plants are of great value in the field of treatment and cure of diseases.
- It has been universally accepted fact that the plant drugs and remedies are found more safer than synthetic medicines for curing most of the complex diseases.
- In western world, as people are becoming aware of the potency and side effect of the synthetic drugs. Thus there is an increasing interest in the plant-based remedies with a basic approach towards nature.
- Active constituents from plant sources have lead to rapid developments in pharmacognosy and phytochemistry.
- Modern pharmacognosy has been developed rapidly due to the improvement made in the technology of isolation processes such as column, paper, thin layer, gas–liquid chromatographic procedures.
- Availability of modern state-of-the-art facility like structure determination and pharmacological screening helps to improve status of pharmacognosy.
- Rapid developments in the field of chemistry, biochemistry and pharmacology have further supported advancements in pharmacognosy.