

1.3 PHARMACOGNOSY (THEORY)

50 hours; 2 hours/week

1. Definition, History and Scope of Pharmacognosy. **2 hours; 2-5 marks**
2. **Plant Taxonomy:** Study of the following families with special reference to medicinally important plants - Apocynaceae, Solanaceae, Umbelliferae, Leguminosae, Rubiaceae, Liliaceae. **3 hours; 2-5 marks**
3. **Classification of Crude drugs:** Alphabetical, Morphological, Chemical, Pharmacological and Taxonomical methods. General aspects of Chemotaxonomy **5 hours; 5-10 marks**
4. **Medicinal Plants Cultivation:** a) Cultivation, collection, Processing and storage of crude drugs: Factors influencing the cultivation of medicinal plants. b) Detailed method of cultivation for the following drugs: i) Senna ii) Isapgol iii) Opium, iv) Cinchona v) Clove c) Conservation of medicinal plants. **8 hours; 7-17 marks**
5. **Study of Natural Pesticides:** Pyrethrum, Neem and Tobacco. **2 hours; 2-5 marks**
6. Study of different types of adulteration in crude drugs with examples. **2 hours; 2-5 marks**
7. Brief study of various plant constituents and ergastic cell inclusions. **2 hours; 2-5 marks**
8. **Study of morphology and microscopy of different plant parts with the specific examples given below:** i. Leaf: Datura, ii. Bark: Cinnamon (Cassia), iii. Rhizome: Ginger, iv. Stem: Ephedra, v. Root: Rauwolfia, , i. Wood: Quassia, vii. Flower: Clove viii. Fruit: Fennel, ix Seed: Nux-Vomica. **10 hours; 10-17 marks**
9. **Carbohydrates:** Biological source, method of production, chemical constituents, identification tests and uses of the following carbohydrates and related products i) Isapgol, ii) Guar gum, iii) Honey, iv) Acacia, v) Agar, vi) Tragacanth, vii) Pectin, viii) Sterculia gum. **5 hours; 5-10 marks**
10. **Lipids:** Biological source, method of production, chemical constituents, identification tests and uses of the following oils and fats i) Castor oil, ii) Cod liver oil, iii) Chaulmoogra oil, iv) wool fat, v) Bees wax vi) Kokum butter, vii) Olive oil , viii) Linseed oil **5 hours; 5-10 marks**
11. **Resins:** a) Natural occurrence, properties, classification and method of production of Resins b) Sources, diagnostic characters, active constituents and uses of: (i) Podophyllum (ii) Ginger (iii) Benzoin (iv) Asafoetida (v) Myrrh **4 hours; 5-8 marks**
12. **Study of plant and animal fibers:** Cotton, Wool, Jute, Silk, Hemp **2 hours; 2-5 marks**

PHARMACOGNOSY (PRACTICALS)

75 hours ; 3 hours/week

1. General morphological study of different parts of the plants*

- a) Leaf: Datura
- b) Bark: Cinnamon (Cassia),
- c) Rhizome: Ginger,
- d) Stem: Ephedra
- e) Root: Rauwolfia,
- f) Wood: Quassia
- g) Flower: Clove
- h) Fruit: Fennel,
- i) Seed: Nux Vomica

2. Transverse section of the drugs mentioned in 1**

3. Chemical tests for the identification of following drugs and their adulterants

- a) Acacia b) Agar c) Tragacanth d) Honey

4. Chemical tests for the identification of following oils and fats and their adulterants

- a) Castor oil b) Cod Liver oil c) Wool fat d) Bee's wax

5. Chemical tests for the identification of following resins and their adulterants

- a) Asafoetida b) Benzoin c) Myrrh

Note: ** Denotes major experiments * Denotes minor experiments

SCHEME OF EXAMINATION

1. Synopsis	10 marks
2. Major Experiment T S**	25 marks
3. Minor Experiment* Morphology	10 marks
4. Minor experiment* Chemical Test	15 marks
5. Viva-Voce	10 marks

Total

70 marks

PHARMACOGNOSY REFERENCE BOOKS

1. Evans WC. Trease and Evans Pharmacognosy. 15th ed. Philadelphia:Elsevier Science Ltd;2002.
2. Kokate CK, Purohit AR, Gokhale SB. Pharmacognosy. 45th ed. Pune:Nirali Prakashan;2010.
3. Shah BS, Qadry JS. Pharmacognosy. 12th ed. Ahmedabad:BS Shah Prakashan;2005.
4. Wallis TE. Textbook of pharmacognosy. 5th ed. London:JA Churchill Limited;1985.
5. Biren SN, Seth AK. Textbook of pharmacognosy and phytochemistry. 1st ed. New Delhi: A Division of Read Elsevier India Private Ltd;2010.
6. Yoganarsimhan SN. Cultivation of medicinal & aromatic crops. 1st ed. Bangalore:Interline Publishing Private Ltd;2000.
7. The Wealth of India. A dictionary of Indian raw materials and industrial products (All Volumes). New Delhi:NISCAIR, CSIR; 2000.
8. Kokate CK. Practical Pharmacognosy. 4th ed. New Delhi:Vallabh Prakashan;1994.
9. Khandelwal KR. Practical pharmacognosy techniques and experiments. 16th ed. Pune;Nirali Prakashan;2006.
10. Iyengar MA, Nayak SGK. Anatomy of crude drugs. 8th ed. Manipal:Manipal Power Press; 2001.

LIST OF MINIMUM EQUIPMENTS REQUIRED

1. Microscope with Stage	20
2. Balance	5
3. Reflux flask with condenser	5
4. Heating mantle	5
5. Water bath	10