

PHARMACOGNOSY

ER CODE: ER20-13

75 HOURS (3 HOURS/WEEK)

PRESENTED BY

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PHARMACOGNOSY THEORY

Course Code: ER20-13T

75 Hours (3 Hours/week)

Scope: This course is designed to impart knowledge on the medicinal uses of various drugs of natural origin. Also, the course emphasizes the fundamental concepts in the evaluation of crude drugs, alternative systems of medicine, Nutraceuticals and herbal cosmetics.

Course Objectives: This course will discuss the following aspects of drug substances derived from natural resources.

1. Occurrence, distribution, isolation, identification tests of common phytoconstituents
2. Therapeutic activity and pharmaceutical applications of various natural drug substances and phytoconstituents
3. Biological source, chemical constituents of selected crude drugs and their therapeutic efficacy in common diseases and ailments
4. Basic concepts in quality control of crude drugs and various system of medicines
5. Applications of herbs in health foods and cosmetics

Chapter	Topic	Hours
1	<p>Definition, history, present status and scope of Pharmacognosy</p> <p>MCQ: 1M ; 3 Marks question: 0 ; 5 Marks Question: 1 Total 6M</p>	2
2	<p>Classification of drugs:</p> <ul style="list-style-type: none"> • Alphabetical • Taxonomical • Morphological • Pharmacological • Chemical • Chemo-taxonomical <p>Merits, demerits and examples need to be discussed</p> <p>MCQ:1 ; 3 Marks Question: 1 ; 5 Marks question : 1 Total 9M</p>	4
3	<p>Quality control of crude drugs:</p> <ul style="list-style-type: none"> ▪ Different methods of adulteration of crude drugs ▪ Evaluation of crude drugs <p>MCQ: 1; 3 Marks Question : 1 ; 5 Marks question; 1 Total 9 M</p>	6
4	<p>Brief outline of occurrence, distribution, isolation, identification tests, therapeutic activity and pharmaceutical applications of alkaloids, terpenoids, glycosides, volatile oils, tannins and resins.</p> <p>MCQ: 2 ; 3 Marks question: 1 ; 5 Marks question :1 Total 10M</p>	6

5	Biological source, chemical constituents and therapeutic efficacy of the following categories of <u>crude drugs</u> .		30
	Laxatives	Aloe, Castor oil, Ispaghula, Senna	
	Cardiotonic	Digitalis, Arjuna	
	Carminatives and GI regulators	Coriander, Fennel, Cardamom, Ginger, Clove, Black Pepper, Asafoetida, Nutmeg, Cinnamon	
	Astringents	Myrobalan, Black Catechu, Pale Catechu	
	Drugs acting on nervous system	Hyoscyamus, Belladonna, Ephedra, Opium, Tea leaves, Coffee seeds, Coca	
	Anti-hypertensive	Rauwolfia	
	Anti-tussive	Vasaka, Tolu Balsam	

	Anti-rheumatics	Colchicum seed	
	Anti-tumour	Vinca, Podophyllum	
	Antidiabetics	Pterocarpus, Gymnema	
	Diuretics	Gokhru, Punarnava	
	Anti-dysenteric	Ipecacuanha	
	Antiseptics and disinfectants	Benzoin, Myrrh, Neem, Turmeric	
	Antimalarials	Cinchona, Artemisia	
	Oxytocic	Ergot	
	Vitamins	Cod liver oil, Shark liver oil	
	Enzymes	Papaya, Diastase, Pancreatin, Yeast	
	Pharmaceutical Aids	Kaolin, Lanolin, Beeswax, Acacia, Tragacanth, Sodium alginate, Agar, Guar gum, Gelatine	
	Miscellaneous	Squill, Galls, Ashwagandha, Tulsi, Guggul	
<p>MCQ: 6 ; 3 Marks question: 2 ; 5 Marks question :2 Total 22M</p>			

6	<p>Plant fibres used as surgical dressings: Cotton, silk, wool and regenerated fibres</p> <p>Sutures — Surgical Catgut and Ligatures</p> <p>MCQ: 1; 3 Marks question: 1 ; 5 Marks question :0 Total 4M</p>	3
7	<p>Basic principles involved in the traditional systems of medicine like: Ayurveda, Siddha, Unani and Homeopathy• Method of preparation of Ayurvedic formulations like:Arista, Asava, Gutika, Taila, Churna, Lehya and Bhasma.</p> <p>MCQ: 1; 3 Marks question: 1 ; 5 Marks question :1 Total 9M</p>	8
8	<p>Role Of medicinal and aromatic plants in national economy and their export potential</p> <p>MCQ: 0; 3 Marks question: 1 ; 5 Marks question :0 Total 3M</p>	2
9	<p>Herbs as health food:</p> <p>Brief introduction and therapeutic applications of: Nutraceuticals, Antioxidants, Pro-biotics, Pre-biotics, Dietary fibres, Omega-3-fatty acids, Spirulina, Carotenoids, Soya and Garlic</p> <p>MCQ: 2; 3 Marks question: 1 ; 5 Marks question :0 Total 5M</p>	4
10	<p>Introduction to herbal formulations</p> <p>MCQ: 1; 3 Marks question: 1 ; 5 Marks question :0 Total 4M</p>	4
11	<p>Herbal cosmetics:</p> <p>Sources, chemical constituents, commercial preparations, therapeutic and cosmetic uses of: Aloe vera gel; Almond oil, Lavender oil, Olive oil, Rosemary oil, Sandal Wood oil</p> <p>MCQ: 2; 3 Marks question: 1 ; 5 Marks question :0 Total 5M</p>	4
12	<p>Phytochemical investigation of drugs</p> <p>MCQ: 2; 3 Marks question: 0 ; 5 Marks question :0 Total 2M</p>	2

TOPICWISE DISTRIBUTION OF MARKS

Chapter no.	Name of the chapter	Total weightage in marks	No. of questions (1mark)	No. of questions (3marks)	No. of questions (5 marks)
1	Definition, history, present status and scope of Pharmacognosy	1+0+5=6	1	0	1
2	Classification of drugs	1+3+5=9	1	1	1
3.	Quality control of crude drugs	1+3+5=9	1	1	1
4.	Brief outline of occurrence, distribution, isolation, identification tests, therapeutic activity and pharmaceutical applications of Alkaloids, terpenoids, glycosides, volatile oils, tannins and resins	2+3+5=10	2	1	1
5.	Biological source, chemical constituents and therapeutic efficacy of the different categories of crude drugs	6+6+10=22	6	2	2
6.	Plant fibres used as surgical dressings	1+3+0=4	1	1	0

7.	Basic principles involved in the traditional systems of medicine Method of preparation of Ayurvedic formulations	1+3+5=9	1	1	1
8.	Role of medicinal and aromatic plants in national economy and their export potential	0+3+0=3	0	1	0
9.	Herbs as health food	2+3+0=5	2	1	0
10.	Introduction to herbal formulations	1+3+0=4	1	1	0
11.	Herbal cosmetics	2+3+0=5	2	1	0
12.	Phytochemical investigation of drugs	2+0+0=2	2	0	0
TOTAL		88 MARKS	20	11	7

Guidelines to conduct Sessional and Theory examinations

- Two or more periodic sessional (internal assessment) in each academic year.
- The duration of the sessional exam is 90 min.
- The scheme of the question paper:
 - 1. Long Answers (Answer 3 out of 4) $3 \times 5 = 15$
 - 2. Short Answers (Answer 5 out of 6) $5 \times 3 = 15$
 - 3. Objective type of answers (Answer 10 out of 10) $10 \times 1 = 10$

Total 40M
- Final Board Examinations:
 - The duration of the examination shall be for 3 hours
 - 1. Long Answers (Answer 6 out of 7) $6 \times 5 = 30M$
 - 2. Short Answers (Answer 10 out of 11) $10 \times 3 = 30M$
 - Objective type Answers (Answer all 20) $20 \times 1 = 20M$

Total 80M

COURSE CODE : ER20-13P PRACTICALS

75 Hours (3 hours/Week)

1. Morphological Identification of the following drugs:

Ispaghula, Senna, Coriander, Funnel, Cardamom, Ginger, Nutmeg, Black Pepper, Cinnamon, Clove, Ephedra, Rauwolfia, Gokhru, Punarnava, Cinchona, Agar.

2. Gross anatomical studies (Transverse Section) of the following drugs:


Ajwain Datura, Cinnamon Cinchona, Coriander, Ashwagandha, Liquorice, Clove, Curcuma, Nux-vomica, Vasaka.

3. Physical and chemical tests for evaluation of any FIVE of the following drugs:

Asafoetida, Benzoin, Pale catechu, Black catechu, Castor oil, Acacia, Tragacanth, Agar, Guar gum, Gelatin

Assignments

The students shall be asked to submit the written assignments on the following topics (One assignment per student per sessional period. i.e., a minimum of THREE assignments per student)

1. Market preparations of various dosage forms of Ayurvedic, Unani, Siddha, Homeopathic (Classical and Proprietary), indications, and their labelling requirements
 2. Market preparations of various herbal formulations and herbal cosmetics, indications, and their labelling requirements
 3. Herb-Drug interactions documented in the literature and their clinical significances
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Field Visit

The students shall be taken in groups to a medicinal garden to witness and understand the nature of various medicinal plants discussed in theory and practical courses. Additionally, they shall be taken in groups to the pharmacies of traditional systems of medicines to understand the availability of various dosage forms and their labelling requirements. Individual reports from each student on their learning experience from the field visit shall be submitted.

GUIDELINES TO CONDUCT OF PRACTICAL EXAMINATION – SESSIONAL AND BOARD

- ▶ Two or more periodic sessional (Internal assessment).
- ▶ The duration of the examination shall be 3 hours.
- ▶ The scheme of the question paper:
 - ▶ 1. Synopsis = 10M
 - ▶ 2. Experiments =50M
 - ▶ 3. Viva voce =10 M
 - ▶ 4. Practical Record Maintenance =10M
- ▶ Total =80M
- ▶ The marks for the experiments shall be divided into major experiment(Transverse section), minor experiments(Chemical tests) and spotters.
- ▶ Internal assessment: The marks secured by the students out of the total 80 shall be reduced to 10.
- ▶ Assignment marks (average of three) 5M
- ▶ Field visit 5M
- ▶ Total 20M

Final Board Examinations

- ▶ The duration for the Practical examinations shall be for 3 hours
- ▶ The scheme for the question paper is as follows:
 - ▶ 1. Synopsis =10M
 - ▶ 2. Experiments = 60M
 - ▶ 3. Viva voce =10M
 - ▶ Total = 80M
- ▶ The marks for the experiments shall be divided into various categories major experiment (Transverse section), Minor experiment (Chemical tests) and spotters as per the requirement.

THANK YOU