First Semester B. Pharm. (2018 Batch)
Examination 2018

Page No. 1
Date

(1)

PHARMACOGNOSY - I

Ques. 1) What is the definition, scope & development of pharmacognosy?

Pharmacognosy is defined as the scientific and systematic study of physical chemical and biological characters of crude drugs including their history, cultivation, collection and preparation for the commerce.

Scope and development -

Pharmacognosy is important not only as an academic exercise. It is the infrastructure on which evolution of novel medicines depends. Eighty percent of world population depends on crude drug and folklore medicine.

(i) Cultivation and domestication of medicinal plant.
(ii) Analysis of phytochemicals.
(iii) Preparation of General tonics and Stimulants.
(iv) In steroid industry
(v) Herbal preparation
(vi) Preparation of antibiotics
(vii) Flavouring agents and perfumes.
(viii) Tissue culture.

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(11) (2)

Page No.
Date

Q-2 Write short note on classification of drug on the basis of chemical and pharmacological classification of drugs.

Chemical classification :-

The plants and animals synthesize a large number of chemicals like carbohydrates, proteins, fat, volatile oils etc. In these system drugs are classified according to their main chemical category. This system is very useful for the study of crude drug because it gives logical reasoning for the biological activity. Here it is very difficult to place the drug containing two different types of chemicals —

(a) Cinchona contain both alkaloid and glycoside.

chemical constituents	Drugs
(i) Alkaloid	(ii)
Amine	(iii) calchium, Ephedra
Purine	coffee, Tea. (vi)
	(v)
(iii) carbohydrate	(iv)
Gum	Acacia, Colarigium
mucilage	Isbaghula. (iiiv)

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iii) Glycosides	
Aldehyde	Vanilla
Anthraquinone	Aloe, Senna
iv) Lipids	
Fixed oil	Castor, Almond
Fat	Theobroma, Lanolin
v) Steroids cardiac glycosides	Digitalis, Squill

Pharmacological classification

→ In this system of classification, drugs are grouped according to pharmacological action of their most important constituent.

→ Here drugs having similar action are kept together.

→ This system does not give any indication about morphological and chemical nature of drugs.

Pharmacological action	Drugs
Anti-cancer	Vinca, Taxus
Antiasthmatic	Ephedra, Lobelia
Antiinflammatory	Calchium seed
Hallucinagens	Cannabis, Cocaine

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Page No.
Date

Q-4) Write short note on any two?- (2)
(a) Umbelliferae (b) Rutaceae
(c) Solanaceae.

(a) Umbelliferous

→ The umbelliferous plants are annual biennial or perennial herbs.

→ Pinnate type leaves are found in this family which are alternate in arrangement.

→ The fruits belonging to this family is known as umbelliferous fruits

→ The cremacarp splits into two dry partial fruits known as mericarps.

→ These mericarps are attached by a stalk like structure known as carpophore.

Ex- Anise, coriander, cumin, dill Ajawin etc are important drug of this family.

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(b) - Rutaceae

Some volatile oil are lemon oil and orange oil. They are used as flavouring agent and perfuming agent, known for their pleasent characteristic odour. They are also used as stimulant, carminative, stomachic and in rheumatism.

Ex. Lemon oil.

Synonym → Oleum Limonis.

Biological source → Lemon oil is obtained from the peels of citrus limon (L.) Burm. F. It is a member of Rutaceae family.

Geographical distribution → Native to Indian origin, grown in Maharashtra, Karnataka, Tamil Nadu and Uttar pradesh.

Preparation of lemon oil:

1) Steam method
2) Expression or pigver process

Constituents → The lemon peels contain 2-4% volatile oil. The main constituents of volatile oil are terpenes 94% (limonene (90%), citronellal, pinene, limonene, camphene, citral (4%), geranyl acetate, etc.). The chief odour constituent of oil is citral, geranyl acetate.

(c) Solanaceae

Hyoscyamus (Henbane) → Khurasani ajwayan in hindi, Bazarbang in Kashmir and Black Henbane in English obtain from hyoscyamus niger.

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Linn. It contain not less than 0.5% total alkaloids.

→ Found in temperate western Himalayan from Kashmir to Garhwal.

→ In India, cultivated in western region of Himalayan.

→ It is characterised by greyish green colour. Midrib is very broad with numerous hairs.

→ Flower is sessile, unilateral, lower axillary, solitary.

→ Used as mydriatic (atropine and hyoscine)

→ Used as anti-spasmodic, laxative

→ Atropin is a CNS stimulant.

→ Hyoscyamus has weaker parasympathobytic action than Belladonna and Stramonium.

→ Belladona; sag-angur in hindi, Yebruj in bengali and "Deadly nightshade" in english is obtained from dried leaves and flowering tops of Atropa belladonna Linn and Atropa acuminata Royle (India belladonna).

→ They are indigenous to England and countries like Italy, Russia.

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Page No.
Date

Q-5) What is plant tissue culture?

→ It is an important technique for maintaining a part of animal or plant tissue alive after their removal from the organism.

→ Then, the tissue or cell kept usually in culture dishes and provide necessary environment in which cell can live and multiply over period of time.

→ Different media containing mixture of salts, amino acids vitamins etc are used for this purpose

→ This technique is now a days widely applicable for the production of secondary metabolites.

→ People using this technique to increases the yield of bio-active molecules.

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