



EXAM QUESTIONS FOR GOVERNMENT EXAM IN PHARMACOGNOSY

Pharmacognosy Part I

1. Obtaining herbal drugs from wild and cultivated medicinal plants – advantages and disadvantages. Protection measures of the wild medicinal plants. Cultivation of medicinal plants in natural and artificial conditions.
2. Deriving herbal drugs – goals and phases. Basic rules and methods for collecting, drying, packaging, marking and storing the drugs.
3. Contemporary requirements for the quality, safety and efficiency of herbal drugs. Standardisation documents for herbal drugs – content, advantages and disadvantages.
4. Pharmacognostic analysis – aim and methods. Physical, chemical, chromatographic, biological methods for qualitative and quantitative analysis of natural substances. Examples.
5. Types of medicinal phytoproducts and phases in their preparation. Pure natural substances and semisynthetic derivatives of natural substances. Content of phytoproducts and problems in their standardization. Examples.
6. Carbohydrates. Monosaccharides, sugar alcohols and disaccharides. Polysaccharides – classification and general characteristics. Homopolysaccharides. Drugs and products containing monosaccharides and polysaccharides. Pharmacopoeial substances, semisynthetic derivatives and medicinal products.
7. Types of heteropolysaccharide, mucilages and herbal drugs containing them. Pharmacopoeial substances, semisynthetic derivatives and medicinal products from heteropolysaccharides.
8. Fats (lipids) - classification, general characteristic. Solid and soft fats, liquid oils. Classification, composition and sources. Pharmacopoeial substances, semisynthetic derivatives and medicinal products
9. Oils with specific action. Castor and fish oils, omega-3, omega-6 fatty acids, eicosanoids and prostaglandins. Waxes (lipoids) - general characteristics and types. Pharmacopoeial substances, semisynthetic derivatives and medicinal products
10. Phenolic compounds of plant origin - classification, general characteristics and meaning. Simple phenols (C₆-OH), derivatives of hydroxybenzoic acid (C₆-Cl), phenylacetic acid (C₆-C₂), hydroxyphenylpropanes, hydroxycinnamic acid derivatives (C₆-C₃) and herbal drugs containing them. Pharmacopoeial substances, semisynthetic derivatives and medicinal products.
11. Lignans (C₆-C₃-C₃-C₆) and coumarins (C₆-C₃) - classification, general characteristics and herbal drugs containing them. Pharmacopoeial semisynthetic derivatives and medicinal products.
12. Quinones and anthraquinones (C₆-C₂-C₆) - classification, general characteristic and

- herbal drugs containing them. Medicinal products. Vitamin K and semisynthetic derivatives.
13. Flavonoids (C₆-C₃-C₆) - classification, general characteristic and importance for pharmacy and medicine. Flavon, flavonols and their glycosides. Representatives and herbal drugs containing them. Pharmacopoeial substances, semisynthetic derivatives and medicinal products.
 14. Flavanones, flavanonols, isoflavonoids, proanthocyanidins, anthocyanidins and anthocyanins. Representatives and herbal drugs containing them. Pharmacopoeial substances, semisynthetic derivatives and medicinal products. Propolis.
 15. Tannins. Hydrolysable tannins (C₆-C₁)_n and catechinic tannins (C₆-C₃-C₆)_n - classification, general characteristic. Representatives and herbal drugs containing them. Pharmacopoeial substances, semisynthetic derivatives and medicinal products.

Pharmacognosy Part II

16. Terpenes - classification, biogenesis and general characteristics. Examples of different types of monoterpenes (C₁₀) and sesquiterpenes (C₁₅). Pharmacopoeial substances and medicinal products.
17. Essential oils. Classification, general characteristic and importance for pharmacy and medicine. Acyclic and monocyclic monoterpenes (C₁₀). Herbal drugs and essential oils containing mainly acyclic and monocyclic monoterpenes. Pharmacopoeial substances, semisynthetic derivatives and medicinal products.
18. Essential oils and herbal drugs containing mainly bicyclic monoterpenes (C₁₀) and sesquiterpenes (C₁₅). Pharmacopoeial substances, semisynthetic derivatives and medicinal products.
19. Essential oils and herbal drugs containing mainly aromatic monoterpenes (C₁₀) and derivatives of phenylpropane (C₆-C₃). Resins and balsams. Pharmacopoeial substances and medicinal products.
20. Monoterpenoids - iridoids. Classification, general characteristic and therapeutic effects. Carbocyclic iridoids, secoiridoids and valepotriates. Herbal drugs containing them and medicinal products.
21. Sesquiterpenoids - sesquiterpene lactone. General characteristics, classification, representatives and therapeutic effects. Herbal drugs containing them and medicinal products.
22. Triterpenoids - steroids. General characteristics and classification. Sterols, classification, characterization and herbal drugs containing them. Pharmacopoeial substances and medicinal products.
23. Cardiac glycosides. Classification, general characteristic and importance for pharmacy and medicine. Structure-activity relationship. Herbal drugs containing Digitalis type and Strophanthus type cardenolides. Pharmacopoeial substances, semisynthetic derivatives and medicinal products.
24. Saponins - a general characteristic. Steroid and triterpenoid saponins. Classification, general characteristics and herbal drugs containing them. Medicinal products. Sterols, steroidal aglycones and steroidal alkaloids as a source of steroid hormones and steroid anti-inflammatory agents.
25. Alkaloids. Classification, general characteristic and importance for pharmacy and medicine. Alkaloids with nitrogen in the side chain, pyrrolidine, piperidine and pyridine alkaloids and herbal drugs containing them. Pharmacopoeial substances, semisynthetic derivatives and medicinal products.
26. Tropane, quinolone and quinolizidine alkaloids and herbal drugs containing them. Pharmacopoeial substances, semisynthetic derivatives and medicinal products. Cocaine as a model for synthesis of local anesthetics.

27. Isoquinoline alkaloids - biogenesis and classification. Benzyloisoquinoline, morphin (opium), aporphine alkaloids and drugs containing them. Pharmacopoeial substances, semisynthetic derivatives and medicinal products.
28. Isoquinoline alkaloids of the protoberberine, protopine, bisbenzyloisoquinoline, benzophenanthridine, phenanthridine, emetine groups and herbal drugs containing them. Pharmacopoeial substances, semisynthetic derivatives and medicinal products.
29. Indole alkaloids - biogenesis and classification. Physostigmine, Harman, Strychnos and Rauwolfia alkaloids. Herbal rugs containing them, pharmacopoeial substances, semisynthetic derivatives and medicinal products.
30. Indole alkaloids - Vinca, Cataranthus and ergot alkaloids. Herbal rugs containing them, pharmacopoeial substances, semisynthetic derivatives and medicinal products.
31. Imidazole, purine and steroid (glyco-) alkaloids and herbal drugs containing them. Pharmacopoeial substances, semisynthetic derivatives and medicinal products.
32. Herbal drrugs and phytoproducts used in respiratory and gastrointestinal diseases.
33. Herbal drrugs and phytoproducts used in cardiovascular and blood diseases.
34. Herbal drrugs and phytoproducts used in liver, bile and urinary system diseases.
35. Herbal drrugs and phytoproducts used in nervous system diseases, as antitumor agents and for external use.

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