UNIVERSITY OF VETERINARY AND PHARMACEUTICAL SCIENCES BRNO

FACULTY OF PHARMACY

DEPARTMENT OF NATURAL DRUGS

QUESTIONS FOR PHARMACOGNOSY EXAMINATION

1. Definition, origins and development of pharmacognosy. Objectives of research and tasks. Position in system of pharmaceutical sciences.
2. Drugs and therapeutics of natural origin. Definition of drug. Sources of natural therapeutics, content compounds and their classification.
3. Types of natural compounds, their system and classification.
4. Methodology of pharmacognosy.
5. Pharmacopeia and normative.
6. Primary and secondary metabolites. Precursors. Inter-relations in metabolism of plants from the pharmaceutically important compounds point of view.
7. Extraction and isolation of plant content compounds.
8. Physico-chemical methods of secondary metabolites identification.
9. Saccharides, oligo- and polysaccharides: characteristics, formation, occurrence, therapeutic usage.
10. Monosaccharides, glycosides: characteristics, formation, occurrence, therapeutic usage.
11. Shikimates: coumarins, lignans and phenylpropanoids. characteristics, formation, occurrence, therapeutic usage.
12. Shikimates: catechins, depsides, derivatives of benzoic and gallic acid: characteristics, formation, occurrence, therapeutic usage.
13. Mechanism of alkaloid formation in plants. Basic reactions taking place in alkaloid biosynthesis.
14. Alkaloids derived from lysine: characteristics, formation, occurrence, therapeutic usage.
15. Alkaloids derived from ornithine: characteristics, formation, occurrence, therapeutic usage.
16. Alkaloids derived from phenylalanine: characteristics, formation, occurrence, therapeutic usage.
17. Alkaloids derived from tryptophan. characteristics, formation, occurrence, therapeutic usage.
18. Alkaloids derived from histidine, anthranilic acid and nicotinic acid. Characteristics, formation, occurrence, therapeutic usage.
19. Terpenic alkaloids: characteristics, formation, occurrence, therapeutic usage.
20. Steroidal alkaloids: characteristics, formation, occurrence, therapeutic usage.
21. Aliphatic acetogenins. Fats, waxes. Characteristics, formation, occurrence, therapeutic usage.
22. Prostaglandins. Characteristics, formation, occurrence, therapeutic usage.
23. Aromatic acetogenins. Anthraglykosides. Characteristics, formation, occurrence, therapeutic usage.
24. Aromatic acetogenins. Tetracyclins, A-ring of flavonoids. Characteristics, formation, occurrence, therapeutic usage.
25. Izoprenoids: Formation of polyizoprene chains. Cyclization, modification reactions.
26. Terpenes: characteristics, formation, occurrence, therapeutic usage.
27. Steroids: characteristics, formation, occurrence, therapeutic usage.
28. Saponins. Characteristics, formation, occurrence, therapeutic usage.
29. Animal poisons. Gelée royale. Source, characteristics, usage.
30. Biogennic compounds used in pharmacy as „additives“. Characteristics, classification, occurrence, usage.
31. Therapeutics derived from microorganisms and fungi. Characteristics, occurrence, usage.
32. Natural therapeutics and „additives“ of peptidic and protein character. Characteristics, occurrence, usage.
33. Plant and animal sources of vitamines. Characteristics, occurrence, usage.
34. Natural cardioactive compounds.
35. Natural antipyretics and antirheumatics.
36. Natural analeptics.
37. Natural parasympatomimetics, mydriatics.
38. Natural antihypertensives, vazodilatants.
39. Natural geriatrics, aphrodisiacs, antiuratics.
40. Natural laxatives.
41. Natural diuretics, anthelmintics
42. Natural dezinficients, antiseptics.
43. Natural antitusics and expectorants.
44. Natural astringents, antidiarhoics, hemostatics.

45. Natural antiphlogistics.
46. Natural antiprotozoics, insecticides.
47. Natural emetics, antimycotics.
48. Natural analgesics.
49. Natural sedatives.
50. Natural cytostatics.
51. Natural hepatoprotectives, dietetics.
52. Natural psychofarmacs, hallucinogens.
53. Natural cholagogues.
54. Natural diaphoretics, metabolics.
55. Natural uterotonics, gynecologics.
56. Natural dermatologics, rubefacients.
57. Natural spasmolytics, myorelaxants.
58. Natural antiasthmatics, antidysrytmics.
59. Natural local anesthetics, peripheral myorelaxants.
60. Natural stomachic, coregents.
61. Natural drugs affecting blood vessels and hyperlipoproteinemia.
62. Natural drugs affecting blood coagulation.
63. Natural substitutes of blood plasma and transfuse liquids.
64. Agrimoniae herba, Allii sativi bulbus
65. Balsamum tolutanum, Veratri albi radix
66. Rauwolfiae radix, Senegae radix
67. Liquiritiae radix, Foenugraeci semen
68. Ipecacuanhae radix, Farfarae folium
69. Chamomillae flos, Aurantii amari pericarpium
70. Opium, Plantaginis folium
71. Secale cornutum, Eucalypti etheroleum
72. Belladonnae folium et radix, Droserae herba
73. Menthae piperitae herba, Tiliae flos
74. Sennae folium, Saponariae radix
75. Uvae ursi folium, Balsamum peruvianum
76. Strophanthi semen, Visci albi herba
77. Thymi herba, Betulae folium
78. Serpylli herba, Melissae herba
79. Rhei radix, Foeniculi fructus
80. Aloe barbadensis, Ginkgo folium
81. Juniperi fructus et lignum, Levistici radix
82. Catharanthus roseus, Vincae herba
83. Scillae bulbus, Primulae radix
84. Glandulae lupuli, Eucalypti etheroleum
85. Strychni semen, Gallae
86. Hippocastani semen, Visnagae fructus
87. Chinae cortex, Anisi vulgaris fructus
88. Drugs containing purine bases
89. Althaeae folium et radix. Pini pumilionis etheroleum
90. Digitalis folium, Chelidonii herba
91. Valerianae radix, Passiflorae herba
92. Aconiti radix, Lichen islandicus
93. Crataegi folium cum flore, Petroselini radix
94. Frangulae cortex, Sambuci flos
95. Verbasci flos, Podophyllum
96. Arnicae flos, Boldo folium
97. Calendulae flos, Cinchonae cortex
98. Erythroxylum coca, Eucalypti folium
99. Purpose and methods of pharmacognostic examination of drugs
100. Drugs examination - Pharmacopoeia
101. Microscopic examination methods
102. Microscopic preparates and their preparation
103. Pharmaceutically important bacteria
104. Pharmaceutically important algae and fungi

105. Pharmaceutically important lichens, mosses and ferns
106. Characteristic of pharmaceutically important genera of family Liliaceae and Apocynaceae
107. Characteristic of pharmaceutically important genera of family Papaveraceae and Ranunculaceae
108. Characteristic of pharmaceutically important genera of family Brassicaceae and Primulaceae
109. Characteristic of pharmaceutically important genera of family Viciaceae and Polygonaceae
110. Characteristic of pharmaceutically important genera of family Asteraceae and Apiaceae
111. Characteristic of pharmaceutically important genera of family Solanaceae
112. Characteristic of pharmaceutically important genera of family Araliaceae and Rutaceae
113. Characteristic of pharmaceutically important genera of family Scrophulariaceae and Loganiaceae
114. Micro sublimation and possibilities of its usage for pharmacognostic analysis
115. Grade of disintegration and its determination
116. Determination of extractive compounds – residues after desiccation of extracts
117. Essential oil quantification
118. Evaluation of drugs containing bitter substances – Number of bitterness
119. Evaluation of mucilage containing drugs – Number of swelling
120.Quantification of tannins in plant material
121. Determination of number and grade of acidity, saponification, ester, iodine, peroxide
122. Qualitative analysis of sugars
123. Qualitative analysis of glycosides generally
124. Qualitative analysis of phenolic glycosides
125. Qualitative analysis of anthraglycosides
126. Qualitative analysis of cardioactive glycosides
127. Qualitative analysis of flavonoids
128. Qualitative analysis of saponins
129. Qualitative analysis of tanninns
130. Qualitative analysis of essential oils
131. Qualitative analysis of alkaloids generally
132. Qualitative analysis of tropane alkaloids
133. Qualitative analysis of ergot alkaloids
134. Qualitative analysis of purine basis
135. Quantitative analysis of of arbutine
136. Quantitative analysis of anthraglycosides
137. Quantitative analysis of flavonoids
138. Quantitative analysis of tannins
139. Quantitative analysis of alkaloids via titration
140. Quantitative analysis of alkaloids via gravimetric determination
141. Quantitative analysis of alkaloids colorimetric determination
142. Characteristic features for anatomic identification of roots and rhizomes
143. Characteristic features for anatomic identification of herbs
144. Characteristic features for anatomic identification of leaves
145. Characteristic features for anatomic identification of flowers
146. Characteristic features for anatomic identification of fruits
147. Characteristic features for anatomic identification of seeds
148. Characteristic features for anatomic identification of barks and woods
148. Characteristic features for anatomic identification of drugs powdered

Apart of pharmacognosy examination is macroscopic recognition of 10 drugs and microscopic identification of three preparates.