1. Define glycosides. Classify glycosides giving suitable examples.

2. Give the Stas-Otto method for the isolation of glycosides.

3. Give one example of a drug from steroidal saponin, triterpenoidal saponin, cardiac glycoside, anthracene glycoside and bitter glycoside category along with its biological source and major use.

4. What are saponin glycosides? Give the general tests to identify saponin glycosides.

5. How is saponin glycoside classified? Mention the physicochemical properties of glycosides.

6. Write the significance of steroidal saponins.

7. Give the pharmacognosy of Liquorice.

8. Write the pharmacognostic details of Ginseng.

9. What are cardioactive glycosides? How are they classified?

10. What are the tests performed to identify cardioactive glycosides. Give its details.

11. Discuss the structure and stereochemistry of cardioactive glycosides.

12. Write the mechanism of action of Digitalis glycosides.

13. Write the inter-relationship between the glycosides of *Digitalis purpurea* and *Digitalis lanata*.

14. Discuss the pharmacognosy of Strophanthus.

15. Give the chemical structures of –
   a) Aloe-emodin
   b) Digoxin
   c) Barbaloin
   d) Diosgenin
   e) Glycyrrhetinic acid

16. What are the adulterants of Digitalis and how can they be detected?

17. Give the powder characteristics of Senna with neat labeled diagrams.

18. Give the biological source, chemical constituents and uses of Rhubarb.

19. Write about the general and specific tests performed to differentiate the different varieties of Aloe.

20. What are bitter glycosides? Give the biological source, chemical constituents and uses of Gentian.

**UNIT – II**

21. What are alkaloids? Differentiate between true, pseudo and amino alkaloids.

22. Write about the role played by alkaloids in plants.

23. Discuss the physical properties of alkaloids with suitable examples.

24. What are the chemical tests for alkaloids? Discuss them.

Cont.....[2]
25. Give the chemical classification of alkaloids with the basic ring structure and examples.
26. Write about the isolation and extraction of alkaloids.
27. Give the pharmacognosy of Lobelia.
29. Give the pharmacognostic details of Belladonna (Deadly nightshade).
30. Write the biological source, chemical tests and uses of Cinchona bark.
31. Write about the adulterants and substituents of Belladonna.
32. Write the biological source, chemical constituents and uses of Rauwolfia.
33. Explain the microscopy of Nux-vomica with the help of a neat labeled diagram.
34. Explain the life cycle of Ergot with the help of a neat labeled diagram.
35. How is opium cultivated, collected and prepared for the market?
36. Write about the chemical tests and uses of Opium.
37. Give the chemical structure of –
   a) Quinine
   b) Reserpine
   c) Codeine
   d) Caffeine
   e) Ephedrine
38. Write short notes on Solanum.
39. Give the biological source, chemical constituents and uses of Tea.
40. Write the pharmacognosy of Pilocarpus.
41. Write a note on Vinca alkaloids.
42. Write about the following specific tests conducted for the following alkaloids –
   a) Thalleoquin test
   b) Murexide test
   c) Vitali-Morin test for tropane alkaloids.

UNIT – III

43. What are tannins? Give their properties.
44. What is Goldbeater’s skin test?
45. What are the tests of tannins.
46. Give the classification of tannins.
47. Write short notes on pseudo tannins.
48. Give the biological source, active constituents and uses of any two tannin containing drugs.
49. Give the significance of tannins.

Cont....[3]
50. Differentiate between hydrolysable and condensed tannins.

51. Give the chemical structures of –
   a) Gallic acid
   b) Catechol
   c) Glucogallin
   d) Pyrogallol
   e) Ellagic acid

52. Give the biological source and morphology of Myrobalan.

53. Write about the pharmacognosy of Arjuna.

54. Differentiate between Black Catechu and Pale Catechu.

55. Write the biological source, chemical constituents and uses of Kattha.

56. Write the biological source, chemical constituents and uses of Gambir.

57. Give the details of test for Gambier-fluorescein and Matchstick test for Catechin.

58. Write about the manufacture of Black Catechu.

59. Give the biological source, chemical constituents and uses of Myrobalan.

60. Write about the cultivation and collection of Gambier.

61. Give the biological source, chemical constituents and adulterants of Arjuna.

62. Write about the cultivation and collection of Arjuna.

**UNIT – IV**

63. Define resins.

64. Discuss the chemical nature of resins.

65. Classify resins with suitable examples.

66. Write about isolation of resins.

67. Write the biological source, active constituents and uses of any two resin containing drugs.

68. Write the chemical structure of –
   a) Podophyllotoxin
   b) Coniferyl benzoate

69. Differentiate between Siam and Sumatra benzoin.

70. Write about the identification tests of Benzoin.

71. What is Tolu balsam? How can it be identified?

72. Write about the chemical constituents and adulterants of Tolu balsam.

73. Give the pharmacognosy of Podophyllum.

74. Write a short note on Podophyllum resin.

75. Describe the morphology of Podophyllum.
76. Explain the microscopical characters of Podophyllum with the help of a neat labeled diagram.

77. Write a note on the chemical constituents and uses of Podophyllum.

78. How is asafetida collected and prepared for the market?

79. Give the chemical structures of –
   a) Umbelliferone
   b) Podophyllotoxin

80. Describe the morphology of Asafoetida and Tolu balsam.

81. Give the biological source, chemical constituents and uses of Asafoetida.

82. Write about the identification tests of Asafoetida.