

LIST OF PRACTICAL SKILLS FOR EXAM ON DISCIPLINE
“TECHNOLOGY OF MEDICINES”
Specialization “Pharmacy, industrial pharmacy”

1. Write material balance equation and calculate output (η , %), losses (ε , %) and factor of account (F_a).
2. Make working prescription for manufacturing 100 kg of tablets with sodium chloride on 0.9 if output is 95 %. Indicate production method of sodium chloride tablets and enumerate quality parameters for these tablets.
3. Make working prescription for manufacturing 3 000 tablets with sodium chloride on 0.9 if F_a is 1.04. Indicate use of these tablets and compose manufacturing scheme for sodium chloride tablets.
4. Calculate amount of excipients required for manufacturing 5000 tablets with analgin on 0.5/0.55 if output is 97 %. Specify function of the excipients used in the production.
5. Make working prescription for manufacturing 60 kg of tablets with acetylsalicylic acid on 0.5/0.6 if F_a is 1,01. Name production methods of tablets and specify production method for acetylsalicylic acid tablets.
6. Make working prescription for manufacturing 120 kg tablets with streptocide on 0.3/0.35 if $F_a = 1.03$. Enumerate quality control parameters of the tablets.
7. Calculate amount of starch required for manufacturing 2500 tablets with streptocide on 0.3/0.35 if output is 97 %. Specify function of starch in the tablet formulation.
8. Calculate amount of excipients for manufacturing 50 kg of tablets with nitroglycerine on 0.0005/0.1 if output is 99 %. Specify production method and give examples of the tablets produced by the same method.
9. Calculate amount of excipients for manufacturing 100 kg of tablets with nitroglycerine on 0.0005/0.1 if F_a is 1.02. Specify production method and give examples of the tablets produced by the same method.
10. Calculate amount of active ingredient for manufacturing 1000 tablets with nitroglycerine on 0.0005/0.1 if output is 96 %. Compose manufacturing scheme for these tablets.
11. Calculate amount of active ingredient for manufacturing 500 tablets with nitroglycerine on 0.0005/0.1 if output is 96 %. Compose manufacturing scheme for these tablets.
12. It was prepared lead subacetate solution with density 1.34. How much standard solution with density 1.25 can be prepared from 15 L of this solution? Specify production method and give examples of solutions prepared by the same method.
13. It was prepared 6 L of Burow's solution with density 1.052. How much water purified is needed for dilution to obtain solution with density 1.048? Specify production method and filters that can be used for purification of this solution.
14. Make working prescription for manufacturing 15 kg of Althea syrup if $F_a = 1.02$. Compose manufacturing scheme for Althea syrup production.
15. Make working prescription for manufacturing 20 kg of sugar syrup if output is 98 %. Indicate use of this syrup and enumerate quality parameters.
16. It was prepared 10 kg of sugar syrup with concentration 69 %. How much standard sugar syrup can be prepared from this syrup? Specify mixers that are preferred in the production of syrups.
17. It was prepared 25 kg of sugar syrup with concentration 72 %. How much standard sugar syrup can be prepared from this syrup? Specify production features of sugar syrups.
18. It was prepared 35 kg of sugar syrup with concentration 69 %. Normalize solution and specify production features.

19. Make working prescription for manufacturing 400 ampoules on 10 mL of 10 % Calcium gluconate injections, if $F_a = 1.03$, $\rho = 1.044$. Specify production features of this solution.
20. Make working prescription for manufacturing 75 L of 10 % Calcium gluconate injections, if $F_a = 1.02$, $\rho = 1.044$. Specify production features of this solution.
21. Make working prescription for manufacturing 60 L of 25 % Magnesium sulfate injection if $F_a = 1.05$, $\rho = 1.1159$. Specify production features of Magnesium sulfate injection.
22. Make working prescription for manufacturing 60 L of 25 % Magnesium sulfate injection if $F_a = 1.05$, $VIC = 0.58$. Specify production features of Magnesium sulfate injection.
23. Make working prescription for manufacturing 55 L of 25 % Magnesium sulfate injection if $F_a = 1.05$, $\rho = 1.1159$. Specify production features of Magnesium sulfate injection.
24. Make working prescription for manufacturing 45 L of 10 % Calcium chloride injection if $F_a = 1.03$, $\rho = 1.058$. Specify production features of Calcium chloride injection.
25. Make working prescription for manufacturing 200 L of 10 % Calcium chloride injection if $F_a = 1.05$, $VIC = 0.58$. Specify production features of Calcium chloride injection.
26. Make working prescription for manufacturing 180 L of 10 % Calcium chloride injection if $F_a = 1.02$, $VIC = 0.58$. Specify production features of this solution.
27. Make working prescription for manufacture of 2 L of 10 % Caffeine and sodium benzoate injection if $F_a = 1.02$, $\rho = 1.034$. Enumerate quality parameters of solutions for injections.
28. Normalize 46 L of 18 % caffeine and sodium benzoate solution for injection if standard concentration of solution is 20 %, $\rho_{20\%} = 1.073$. Specify production features of caffeine and sodium benzoate injection.
29. Normalize 46 L of 23 % caffeine and sodium benzoate solution for injection if standard concentration of solution is 20 %. Specify the features of manufacturing of caffeine and sodium benzoate injection.
30. Normalize 30 L of 7 % Caffeine and sodium benzoate injection (standard concentration is 10 %) if $\rho_{10\%} = 1.034$. Indicate methods for leaker testing of ampoules with this solution.
31. Make working prescription for manufacturing 8000 ampoules on 1 mL of 5 % ascorbic acid solution if $F_a = 1.03$, $\rho = 1.018$. Enumerate quality parameters of solutions for injections.
32. It was prepared 30 L of 22 % caffeine and sodium benzoate injection. Normalize solution (standard concentration is 20 %). Normalize 5 L of 22 % caffeine and sodium benzoate injection if standard concentration is 20%. Specify features of this solution.
33. Normalize 30 L of 38 % Hexamethylenetetramine injection if standard concentration is 40 %, $\rho_{40\%} = 1.088$. Specify method of sterilization for this solution.
34. Normalize 20 L of 35 % Hexamethylenetetramine injection if standard concentration is 40 %, $\rho_{40\%} = 1.088$. Specify method of sterilization for this solution.
35. Make working prescription for manufacture 1500 ampoules on 1 mL of 20 % camphor oil solution if $F_a = 1.02$, $\rho = 0.926$. Specify production features of this solution.
36. Make working prescription for manufacturing 5 L of eye drops with 0.25 % Zinc sulfate and 2 % boric acid if $F_a = 1.03$, $VIC_{ZnSO_4} = 0.58$, $VIC_{H_3BO_3} = 0.68$. Specify filtration apparatus for eye drops.
37. It was prepared 35 L of 3 % pilocarpine hydrochloride eye drops. Normalize solution if standard concentration is 1 %. Enumerate quality parameters for eye drops.
38. Make working prescription for manufacture of 100 L of Valerian tincture by percolation method if $C_{ab} = 3.0$. Specify methods of purification for tinctures.
39. Make working prescription for manufacture of 40 L of Valerian tincture by percolation method if $C_{ab} = 3.0$. Specify preferred filters for tinctures.
40. Make working prescription for manufacture of 180 L of Motherwort (*Leonurus*) tincture by percolation method if $C_{ab} = 3.0$. Specify production methods of tinctures.

41. Make working prescription for manufacture of 150 L of Lily of the valley (*Convallaria*) tincture by percolation method if $C_{ab} = 2.0$. Enumerate quality parameters of tinctures.
42. Make working prescription for manufacture of 45 L of Lily of the valley (*Convallaria*) tincture by percolation method if $C_{ab} = 2.0$. Write manufacturing scheme of the tincture.
43. Make working prescription for manufacture of 20 L of Belladonna tincture by percolation method if $C_{ab} = 1.5$. Specify the features of tincture production by percolation method.
44. Make working prescription for manufacture of 180 L of Hawthorn tincture by percolation method if $C_{ab} = 3.0$. Specify production methods of tinctures.
45. Make working prescription for manufacturing 150 L of Hawthorn tincture by percolation method if $C_{ab} = 1.5$. Specify methods of tincture purification.
46. Make working prescription for 50 L of Motherwort (*Leonurus*) liquid extract by percolation method if $C_{ab} = 2.5$, $n = 8$. Specify production methods of liquid extracts.
47. Make working prescription for manufacturing 50 L of Motherwort (*Leonurus*) liquid extract by repercolation method if $C_{ab} = 2.0$. Enumerate quality parameters of liquid extracts.
48. Make working prescription for manufacturing 300 L of Motherwort (*Leonurus*) liquid extract by repercolation method if $C_{ab} = 2.0$. Specify the production features of liquid extracts by repercolation method.
49. Make working prescription for manufacturing 45 L of Motherwort (*Leonurus*) liquid extract by repercolation method if $C_{ab} = 2.0$. Enumerate quality parameters of liquid extracts.
50. Make working prescription for 60 L of High cranberry (*Viburnum*) liquid extract by repercolation method if $C_{ab} = 3.0$. Specify filters that are preferred for liquid extracts.
51. Make working prescription for 18 L of Hawthorn (*Crataegus*) liquid extract by percolation method if $C_{ab} = 3$, $n = 7$. Specify operation at the stage of "Extract obtaining" by percolation method.
52. Make working prescription for manufacturing 50 L of Adonis vernalis liquid extract concentrate by repercolation method if $C_{abs} = 2.0$, $n = 8$. Specify filters that are preferred for liquid extracts-concentrates.
53. Make working prescription for manufacturing 40 L of Adonis vernalis liquid extract concentrate by repercolation method if $C_{abs} = 2.0$, $n = 8$. Specify use of concentrated extracts.
54. Make working prescription for manufacturing 15 L of Valerian liquid extract-concentrate by repercolation method if $C_{abs} = 4$. Specify use of concentrated extracts.
55. Make working prescription for manufacturing 80 kg of Licorice soft extract if content of glycyrrhizinic acid in plant raw material is 11% (content of glycyrrhizinic acid in extract must be not less than 14%). Enumerate quality parameters of soft extracts.
56. Standardize 4 kg of Belladonna soft extract with water content 30 %. Specify production methods of soft extracts.
57. Standardize 30 kg of Valerian soft extract with water content 15 %. Enumerate quality parameters of soft extracts.
58. Normalize 45 kg of dry extract with water content 10 %. Enumerate quality parameters of dry extracts.
59. Normalize 12 L of Adonisyd if activity of preparation is 32 FUA / 1 mL (standard activity – 27 FUA / 1 mL). Specify production method and extraction solvent for this preparation.
60. Make working prescription for manufacturing 20 L of Adonizyd if activity of raw material is 62 FUA / 1 g (the activity of preparation must be 27 FUA / 1 mL) and $F_a = 1.02$. Enumerate quality parameters of new galenic preparations.