Questions to

Industrial Technology of Drugs

Practically oriented complex examination on technology of drugs, management and economics in pharmacy

Faculty **Pharmaceutical** Specialty 8.110201 "**Pharmacy**" Course **5**

1. Explain the role and importance of balance in the production of pharmaceuticals.
2. Give the classification and general characteristics of grinding machines.
3. Give the classification and general characteristics of the sieves.
4. Choose the method of preparing soft extract of Artemisia and make flowchart according to GMP.
5. Name the methods and apparatus for determining the concentration of ethanol.
6. Choose the method of preparing glucose solution for injection in ampoules and make flowchart according to GMP.
7. Describe methods of recuperation of ethanol from waste plant material. What is the essence of the ethanol distillation?
8. Name the group of substances that require chemical stabilization, and basic methods of stabilization of solutions for injection.
9. Choose the method of sodium chloride tablets preparation and make flowchart according to CMP.
10. Choose the method of potassium bromide tablets preparation and make flowchart according to GMP.
11. Explain the method of manufacturing of tablets Analgin and compose the flowchart.
12. Choose the method of preparation of capsules with sodium diclofenac and make a flowchart according to GMP.
13. How the quality control of capsules is carried out.
14. Choose the method of manufacturing of an liniment of streptotsid and make flowchart according to GMP.
15. Describe the equipment, which is used for homogenizing in industrial production of soft drugs.
16. Describe quality control of aerosol preparations according to the Pharmacopoeia.

17. Calculate how many 96.5% ethanol and water should be taken to prepare 60 kg of 70% ethanol.

18. Calculate the concentration of ethanol in the density determined by pycnometer m = 9.205, the mass of pycnometer with water m_1 = 19.1605, the mass of pycnometer with ethanol m_2 = 17.3405.

19. Calculate mass of raw material and solvent necessary to obtain 150.0 l of valerian tincture (absorption coefficient = 1.3). Choose the method of extraction and make flowchart according to GMP.

20. Calculate mass of raw material and volume of solvent needed for obtaining 220 l of Leonurus tincture (absorption coefficient = 3.3). Choose the method of extraction and make flowchart according to GMP.

21. Calculate how much 95 % ethanol is required for the preparation of 150.0 liters of valerian tincture? How to prepare solvent? How much raw material and solvent is necessary to obtain 150.0 1 of valerian tincture (absorption coefficient = 1.3)? Choose the method of extraction and make flowchart according to GMP.

22. Make the working formula for the manufacturing 200.0 1 of calendula tincture (consumption factor = 1.100). Choose the method of extraction and make flowchart according to GMP.

23. Calculate how much water should be added to 350.0kg of soft extract of Artemisia containing 15% moisture.

24. How long does it take to collect the first portion of percolate in obtaining a liquid extract of buckthorn from 15.0g of raw materials, if the percolation rate is 0.9 ml/min. Choose the method of extraction and make flowchart according to GMP

25. Calculate how much water should be evaporated from 200.0 of soft extract of Artemisia containing 29% moisture. Choose the method of preparing soft extract of Artemisia and make flowchart according to GMP

26. Calculate how many glucose of 9.8% moisture should be added to obtain 40% of the standard solution from 200.0 1 38% glucose solution for injection. Density = 1.1498 g/ml.

27. Make the working formula for manufacturing 5000 ml 20% solution for the injections of sodium caffeine-benzoate. Ratio increase = 0.65 ml/g, the density of 20% solution = 1.073.

28. Make a working formula for syrup Pertussin of 600 packs of 100.0 ml, if the output of the finished product is 98 %. Composition of Pertussin per 100.0 ml:

Extract of thyme - 12.0 ml
Sugar syrup - 82.0
Ethyl Alcohol 96% - 5.0 ml
Potassium bromide - 1.0g

Describe the features of the manufacturing technology and quality control of syrups.

29. Compose the working formula for manufacturing 100 packs of powder "Grippostad", of composition per 1 g:

Paracetamol - 0.600
Sucrose - 1.500
Ascorbic acid - 0.050
Aerosil - 0.005

Consumption factor = 1.025. Write the equation of material balancc and calculate the basic parameters.

30. Make the working formula for the production of 100 packages of sodium chloride tablets 0.9 № 10 in the blisters (Consumption factor = 1.020).

31. Make the working formula for the production of 600 packages of potassium bromide tablets 0.5 № 10 (Consumption factor = 1.051).

32. Write the equation of material balance and calculate its basic parameters, if 1000.0 kg of raw material were used for production of 990.0 kg of tablets "Dimedrol". Explain the method of manufacturing and compose the flowchart.

33. Write the equation of material balance and calculate its basic parameters, if 1300.0 kg of raw material were used for production of 1200,0 kg of tablets Analgin.

34. Write the equation of material balance and calculate its basic parameters, to produce 100.0kg capsules with chloramphenicol. Yield of finished product was 99.2%. Briefly describe the methods of gelatin capsules manufacturing.

35. Compose the working formula for manufacturing of 100 tablets of "Zocor", containing such components per 1 tablet (g):

Simvastatin - 0.5000
Potato starch - 0.3090
Calcium stearate-0.0055
Talc-0.0055

Consumption factor = 1.150. Write the equation of material balance and calculate the basic parameters.

36. Calculate how much sulfur should be dissolved in 10kg of oil mixture of other ingredients for making the drug "Olimetin" in the capsules, if the composition per 1 capsule:

Peppermint oil - 8.5 mg
Oil of turpentine -17 mg
Calamus oil - 12.5 mg
Olive oil - 460 mg
Sulfur treated -1.7 mg

Justify the method of preparation of the drug "Olimetin" in gelatin capsules and make a flowchart according to GMP.

37. Make a working formula for manufacturing of 100 packages of capsules with sodium diclofenac 0.05g №10, containing in g per 1 capsule:

Sodium diclofenac - 0.050

Sugar-0.034

Oydragit - 0.015

Calcium stea ate - 0.001

Consumption factor = 1.025 for each ingredient.

38. Compose the working formula for manufacturing of 100 capsules "Klatsid", containing per 1 capsule (g):

Clarithromycin - 0.0020

Lactose monohydrate - 0.1000

Corn Starch - 0.0500

Talc - 0.0001

Magnesium stearate - 0.0002

Consumption factor = 1.003.

Write the equation of material balance and calculate the basic parameters. Give the classification of types of capsules, and specify the methods of their use.

39. Write the equation of material balance and calculate its basic parameters, if you need to produce 15 000 capsules "Olimetin" in a soft gelatin shell. Consumption factor = 1.022.

40. Calculate how much waste product is reduced if the company that produces the multivitamin preparations in capsules, is working with Consumption factor 1.043 instead of 1.048.

41. Make a working formula for manufacturing 15.0 kg of ointment of the following composition:

Streptotsid -1.0

Medical vaseline - 9.0

Consumption factor = 1.005 for cach ingredient.

Choose the method of manufacturing of an ointment and make flowchart according to GMP.

42. Make a working formula for manufacturing 50.0 kg of ointment "Levomekol" of the following composition:

Chloramphenicol - 0.75

Methyluracil -4.0

Polyethylene oxide 1500 - 19.05

Polyethylene oxide 400 - 76.20

Consumption factor = 1.012 for each ingredient.

Choose the method of manufacturing of an ointment and make flowchart according to GMP

43. Calculate waste of streptosid, if 5.5 kg of the active ingredient were used for the production of 100.0 kg 5 % liniment of streptotsid.

44. Make the working formula for the preparation of rectal suppositories with ihthyol 0.2 g № 10 of 200 packages (Consumption factor = 1.051). Composition in g per 1 suppository:

Ihthyol - 0.2

Polyethylene oxide basis -1.5

Choose the method of preparation of suppositories with ihthyol and make flowchart according to GMP.

45. Make a working formula for manufacturing 1000 ml of spray concentrate. Make a material balance equation, if consumption factor = 1.200. "Foaming composition of the drug" Aerosol "Nitazol" for 1 packing:

Nitazol - 1.000

Wax emulsion - 2.500

Olive oil - 6.500

Glycerol - 2.500

Purified water -37.500

Freon 12 – 10.000

46. Make a working formula for manufacturing 600 packages of aerosol "Ingalipt" if consumption factor at the stage of preparing spray concentrate and its packaging = 1.025, and at the filling stage - 1.012. The composition of aerosol packaging, g:

Streptotsid soluble - 0.750

Norsulfazol soluble - 0.750

Thymol-0.015

Eucalyptus oil, 0.015

Peppermint oil -0.015

Ethyl alcohol 95% - 1.800

Sugar - 1.500

Glycerol - 2.100

Tween-80 - 0.9000

Purified water - up to 18,450

Propellant (nitrogen pressure) - 0.350

Choose the method of preparing an aerosol preparation "Ingalipt" and make flowchart according to GMP.