Terminal examination (SEMI-FINAL), 2009/2010
Comprehensive topics, principle of operations and methods

2. Definition of excipient, vehicle, base in according to Ph. Hg. VIII. Grouping of excipients.
6. Research, development and production. Patents in the pharmaceutical industry.
11. Definition, characterization and stability of dosage forms belong to disperse systems.
12. Definition, characterization and stability of dosage forms belong to coherent systems.
23. Characterization of crystalline materials (crystal structure, habit, polymorphism).
29. Molecular encapsulation. Cyclodextrins and co-crystals in the pharmaceutical technology.
31. Processing of vegetable drugs to dosage forms. Methods of extraction.

Production and investigation of dosage forms

6. Preparation, characterization and investigation of tinctures, extracts, cooked and scald preparations.
7. Preparation, characterization and investigation of emulsions and liniments. Excipients for preparation of emulsions.
8. Special emulsion-systems.
12. Semisolid ophthalmic preparations.
13. Ophthalmic disks. Contact lens cleaning and storage solutions.
15. Production of dry powder inhalers (DPI).
18. Microbiological preservation. Investigation of efficacy of preservatives.
19. Investigations for microorganisms and pyrogens.
21. Definition, physicochemical types, production and investigation of injections.
23. Definition, grouping, production and investigation of infusions.
24. Comparison of injections and infusions.
27. Semisolid preparations containing active agents. Viewpoints of their formulation.
28. Definition, structure, characterization and major types of creams.
30. Definition and characterization of pastes, viewpoints of production.
31. Definition and grouping of rectal dosage forms.
32. Definition of suppositories, bases.
33. Other rectal dosage forms (production and investigation of rectal capsules, solutions, emulsions, suspensions, semisolid rectal preparations, foams, tampons on the basis of Ph. Hg. VIII.)
34. Viewpoints of production of vaginal dosage forms.

**Questions of the Prescription practice**
(Reading of the prescription, characterization of the components, administration and patient information)

1. Solutio acriflavini
2. Solutio contra rhagades mamillae
3. Gargarisma chlorogenii
4. Solutio pepsin
5. Solutio noraminophenazoni pro parvulo
6. Sirupus zinci
7. Nasogutta zinci cum ephedrine FoNo VI.
8. Klysmah chlorali pro infante
9. Solutio lugoli
10. Solutio metronidazoli
11. Mixtura pectoralis
12. Solutio theophyllini
13. Oleum pro inhalatione
14. Infusum ipecacuanhae pro parvulo
15. Emulsio olei jecoris
16. Suspensio anaethetica
17. Suspensio zonci aquosa
18. Emulsio paraffini cum phenolptaleino
19. Linimentum ammoniatum
20. Emulsio olei ricini

**Questions of the Galenic practice**
(Technological view-points, production of dosage forms, flowcharts, types and parts of equipments, preparation and dosage form investigations of galenic products)

1. Measurement of mass – Balances. Types of the balances (measurement limit, readability, maintenance).
2. Equipments of particle size reduction. – Crusher: the Hammer grinder. Mill: the Ball mill (working principle, efficiency, maintenance)
4. Mixing of solids. Types of the mixers and tumble mixers for powder mixtures
5. Mixing of semisolids. Types of the mixers and equipments for ointments, creams and high viscosity pastes.
7. Preparation process of pharmaceutical emulsions.
8. Preparation process of stock solutions (solutum).
9. Preparation process of pharmaceutical syrups.
10. Preparation and characterization of 'Sirupus simplex' (Simple syrup).
11. Preparation and characterization of 'Sirupus sorbitti' (Sorbitol syrup).
12. Preparation process of pharmaceutical mucilage.
13. Preparation and characterization of ‘Mucilago methylcellulosi’ (Methylcellulose mucilage).
14. Preparation process of extracts (liquid, semisolid, solid) and tinctures. Types of extractions.
15. Preparation and characterization of ‘Unguentum simplex’ (Simple ointment).
17. Preparation and characterization of ‘Unguentum hydrophilicum anionicum’ and ‘Unguentum emulsificans nonionicum’ (Anionic and nonionic hydrophilic ointment).
18. Preparation process of pastes as suspension ointments.
19. Preparation and characterization of pharmaceutical soaps.