



FORM

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SYNOPSIS

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**MEDICAL UNIVERSITY - PLEVEN**  
**DEPARTMENT "Experimental and Clinical Pharmacology"**  
**COURSE: Pharmacology**

**SYLLABUS OF PHARMACOLOGY**  
for IV-year, 7<sup>th</sup>-semester undergraduates (ELE)  
Academic year: 2015/2016

**I. MEDICAL PRESCRIPTION**

1. Structure of the medical prescription. Units of measurement.
2. The origin of drugs.
3. Drug dosage forms. Classification. Galenic preparations (phytomedicinals).
4. Solid dosage forms. Powders. Tablets. Prescription writing.
5. Solid dosage forms. Capsules. Pills. Troches. Granules. Prescription writing.
6. Liquid dosage forms. Solutions. Emulsions. Suspensions. Prescription writing.
7. Liquid dosage forms. Mixtures. Mucilage. Drops. Sterile forms for injection. Prescription writing.
8. Semisolid dosage forms. Ointments. Liniments. Gels. Prescription writing.
9. Semisolid dosage forms. Suppositories. Plasters. Plaques. Prescription writing.
10. Aerosols. Prescription writing.

**II. GENERAL PHARMACOLOGY**

11. Drug, drug product. Definition. Drug nomenclature. Drug evaluation.
12. Pharmacodynamics. Mechanisms of action - receptor and nonreceptor mechanisms.
13. Pharmacodynamics. Dose-response relationship. Drug potency and efficacy, therapeutic index.
14. Combined effects of drugs - synergism, potentiation, antagonism.
15. Factors modifying drug action. Pharmacogenetics. Race.
16. Factors modifying drug action - body size, age.
17. Factors modifying drug action - sex.
18. Factors modifying drug action - pathological states, environmental factors. Chronopharmacology.
19. Pharmacokinetics. Distribution - volume of distribution, penetration through barriers, plasma protein binding, tissue storage.
20. Pharmacokinetics. Biotransformation - nonsynthetic (phase I) and synthetic (phase II) reactions, microsomal enzyme induction and inhibition, first-pass metabolism.
21. Pharmacokinetics. Renal and extrarenal excretion. Kinetics of elimination. Plasma half-life.
22. Pharmacokinetics. Absorption. Enteral routes of drug administration.
23. Parenteral routes of drug administration.
24. Adverse (unwanted drug reactions) - side and toxic effects. Teratogenicity. Mutagenesis. Carcinogenicity.
25. Phenomena associated with prolonged drug application - drug allergy, dependence, tolerance, idiosyncrasy, cumulation.
26. Pharmacological principals of antidote therapy.

**III. PHARMACOLOGY OF MAJOR ORGAN S AND SYSTEMS**

27. Autonomic nervous system: neurotransmitters; receptors; effects. Classification of ANS drugs.
28. Direct and indirect acting cholinergic stimulants.
29. M-cholinergic blocking drugs.
30. N-cholinergic blocking drugs. Neuromuscular blocking agents.
31. Direct and indirect acting adrenergic drugs. Alpha-adrenomimetics (alpha-agonists).
32. Beta-adrenomimetics (beta-agonists).
33. Alpha-blocking drugs. Adrenergic neuron blocking agents (presynaptic acting drugs).
34. Beta-blocking drugs.
35. Eicosanoids: prostaglandins, leukotrienes. Vasoactive peptides: angiotensin; kinins; vasopressin. NO.
36. Histamine. Drugs acting on histamine transmission.
37. Serotonin. Drugs acting on serotonin transmission.
38. NSAID. Mechanism of action.
39. NSAID. Classification.
40. Local anesthetics.

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41. CNS: neurotransmitters. Classification of drugs, effecting CNS.
42. General anesthetics.
43. Sedative-hypnotic drugs.
44. Antiepileptic drugs.
45. Antiparkinson drugs.
46. Antipsychotic drugs.
47. Anxiolytics.
48. Antidepressants. Antimanic drugs.
49. Opioids. Mechanism of action.
50. Opioids. Classification. Toxicity.
51. Drugs used in the treatment of heart failure.
52. Antianginal drugs.
53. Antiarrhythmic drugs.
54. Vascular protective drugs: capillarotonics and venotonics.
55. Lipid-lowering drugs.
56. Antihypertensive drugs: Angiotensin-converting enzyme inhibitors. Angiotensin receptor-blocking agents.
57. Antihypertensive drugs: beta-blockers.
58. Antihypertensive drugs: Centrally acting sympathoplegic drugs (alpha-agonists and imidazoline-receptor agonists).
59. Antihypertensive drugs: diuretics, vasodilators.
60. Antihypertensive drugs: alpha-blockers.
61. Calcium channel blockers.
62. Drugs acting on the kidney.
63. Drugs affecting blood coagulation.
64. Drugs affecting hemopoietic system.
65. Antimicrobial drugs: mechanisms of action, mechanisms of resistance.
66. Penicillins.
67. Cephalosporines.
68. Other beta-lactams. Glycopeptides.
69. Aminoglycosides.
70. Tetracyclines.
71. Macrolides.
72. Lincosamides, Amphenicols. Polymyxins.
73. Quinolones.
74. Sulfonamides.
75. Antimycobacterial drugs - antitubercular and antileprotic.
76. Antiviral drugs.
77. Antifungal drugs.
78. Antiprotozoal drugs.
79. Antihelminthic drugs.
80. Drugs acting on the uterus.
81. Antiasthmatic drugs.
82. Antitussive drugs. Expectorants.
83. Antiulcer drugs.
84. Laxatives. Antidiarrheal drugs.
85. Antiemetics. Appetite-affecting drugs. Enzyme preparations.
86. Spasmolytic agents. Drugs acting on the liver and the biliary tract.
87. Hypothalamic hormones. Pituitary hormones. Thyroid and antithyroid drugs.
88. Parathyroid hormones. Vitamin D and bone mineral homeostasis.
89. Pancreatic hormones. Antidiabetic drugs.
90. Glucocorticoids. Mineralcorticoids.
91. Male sex hormones. Anabolic steroids.
92. Female sex hormones. Contraceptive drugs.
93. Drugs used in cancer chemotherapy.
94. Immunomodulators.

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