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**PHARMACOLOGY EXAMINATION SYLLABUS**

GENERAL PRINCIPLES

1. Basics of pharmacology. Definition of a drug. Drug names – types. Essential drugs.
2. Development of a drug – stages and phases.
3. Passive transport of drugs – types and characterization.
4. Active transport of drugs. Transporters – types.
5. Routes of drug administration. Absorption.
6. Drug distribution.
7. Metabolism (biotransformation) of drugs. Phase I reactions. Significance.
8. Phase II reactions. Significance.
9. Renal excretion of drugs and their metabolites.
10. Extrarenal excretion of drugs.
11. Drug action and drug effect. Types of drug effects. Non-specific drug action.
12. Specific drug action – drug targets. Receptor families according to the mechanism of transmembrane signalling.
13. Drug-receptor interaction – quantitative aspects.
14. Dose-response relationship – types. Safety indexes of drugs.
15. Factors modifying drug action – gender, age and weight.
16. Factors modifying drug action – genetic polymorphism, diseases, biorhytmes.
17. Repeated administration of drugs.
18. Drug combinations. Levels and mechanisms of drug interactions.
19. Drug toxicology.

PHARMACOLOGY OF THE NERVOUS SYSTEM AND MAJOR ORGAN SYSTEMS, CHEMOTHERAPEUTIC DRUGS

1. Cholinergic neurotransmission. Classification of cholinergic drugs.
2. Cholinomimetic drugs.
3. M-cholinoblocking drugs. Neuromuscular-blocking drugs.
4. Adrenergic neurotransmission. Classification of adrenergic drugs.
5. Alpha-adrenomimetic drugs. Alpha-adrenoblocking drugs.
6. Beta-adrenomimetic drugs. Beta-adrenoblocking drugs.
7. Non-adrenergic non-cholinergic neurotransmission.
8. Histamine. H1- and H2-blocking drugs.
9. 5-hydroxytryptamine (serotonin). Drugs affecting serotoninergic neurotransmission.
10. Local anaesthetics.
11. Pharmacological aspects of CNS structure and functioning.
12. General anaesthetics.
13. Sedative and hypnotic drugs.
14. Antiepileptic drugs. Anticonvulsive drugs.
15. Drugs used in Parkinson’s disease.
16. Antipsychotic drugs (neuroleptics).
17. Antidepressants. Mood-stabilizing drugs.
18. CNS stimulants and nootropic drugs.
19. Opioid analgesics and antagonists.
20. Eicosanoids: prostanoids and leucotrienes. Clinical uses.
21. Non-steroidal anti-inflammatory drugs.
22. Non-opioid analgesics.
23. Anti-rheumatoid and anti-gout drugs.
24. Cardioinotropic drugs.
25. Calcium antagonists.
26. Drugs affecting renin-angiotensin system.
27. Antidysrhythmic drugs.
28. Antianginal drugs.
29. Antihypertensive drugs.
30. Peripheral vasoactive drugs. Antihypotensive drugs.
31. Drugs used in dyslipidemias.
32. Diuretics.
33. Drugs affecting erythropoiesis.
34. Anticoagulant drugs.
35. Fibrinolytic drugs. Antiplatelet drugs.
36. Drugs used in bleeding. Vitamin K. Inhibitors of fibrinolysis. Local haemostatics.
37. Drugs affecting the uterus.
38. Drugs affecting the respiratory system.
39. Drugs used in acid-peptic diseases.
40. Antiemetic drugs. Drugs used in obesity.
41. Purgatives. Antidiarrhoeal drugs. Hepatoprotective drugs.
42. Drugs with activity of hypothalamic hormones.
43. Drugs with activity of pituitary hormones.
44. Thyreoactive drugs.
45. Drugs affecting bone-mineral homeostasis.
46. Adrenocorticosteroids and their synthetic analogues.
47. Drugs used in diabetes mellitus.
48. Drugs with activity of sex hormones.
49. Oral contraceptive drugs. Hormone replacement therapy. Drugs used in infertility.
50. Chemotherapeutic drugs. Classifications.
51. Beta-lactam antibiotics. Penicillins.
52. Beta-lactam antibiotics. Cephalosporins. Carbapenems.
53. Aminoglycosides. Glycopeptides.
54. Tetracyclines. Chloramphenicol.
55. Macrolides. Lincosamides. Streptogramins.
56. Quinolones.
57. Sulfonamides. Oxalizidonones.
58. Antimycobacterial drugs.
59. Antianaerobic drugs. Uroantiseptics. Antiseptics.
60. Antifungal drugs.
61. Antiviral drugs.
62. Antiprotozoal drugs. Antispirochetal drugs. Anthelminthic drugs.
63. Cancer chemotherapy.
64. Drugs affecting the immune system.

**Recommended reading:**

1. Rang & Dale's Pharmacology, 7th Edition
2. Basic and Clinical Pharmacology, 11th Edition (LANGE Basic Science). Katzung , Masters, Trevor
3. Pharmacology Lipincott’s Illustrated Reviews Series 5th Edition
4. Basic and Clinical Pharmacology with Toxicology. Edited by N. Boyadjieva. АРСО, 2012.