

BIOCHEMISTRY II**LECTURES****GENERAL MEDICINE****VSBC041p**

Date

1. week 17. 2.	Digestion and absorption of lipids. Blood plasma lipids and the major groups of lipoproteins. Metabolic fate of chylomicrons and VLDL, the metabolism of HDL.
2. week 24. 2.	The biosynthesis of steroid hormones, biosynthesis of calcitriol, biosynthesis of thyroidal hormones.
3. week 3. 3.	The integration of intermediary metabolism at the tissue and organ level.
4. week 10. 3.	The metabolic functions of the liver. Catabolism of hemoglobin, bilirubin metabolism. Metabolism of iron.
5. week 17. 3.	Biotransformation of xenobiotics. Two phases of biotransformation, typical reactions, cytochrome P450. Metabolism of ethanol.
6. week 24. 3.	Control of metabolism. Mechanism of hormone and neurotransmitter action. Types of cell membrane receptors, intracellular effects of ligand binding; intracellular receptors.
7. week 31. 3.	Metabolism of nervous tissue. Neurosecretion. The biosynthesis and inactivation of neurotransmitters, neurotransmission across synapses. Cholinergic, adrenergic, and (inhibitory) gabaergic receptors.
8. week 7. 4.	Water and Na ⁺ , K ⁺ ions balance, osmolality of ECF, oncotic pressure
9. week 14. 4.	Metabolism of calcium, phosphates and fluorine. Hormones involved in their metabolism.
10. week 21. 4.	Transport of O ₂ and CO ₂ . Metabolic pathways producing/consuming H ⁺ ions. Buffer bases of blood, blood plasma (concentrations of components), ICF, the parameters of acid-base status. The role of the lung, the kidney, and the liver in maintaining acid-base balance.
11. week 28. 4.	Normal renal functions. Glomerular filtration. Tubular resorption and secretion.
12. week 5. 5.	The extracellular matrix. Synthesis and post-translational modifications of collagen, intermolecular crosslinks in collagen and elastin, proteoglycans. Calcification of bone, regulation. Biochemical markers of bone resorption and formation.
13. week 12. 5.	The major proteins of blood plasma. Endothelial cells. The blood-coagulation cascade, inhibition of clotting. Fibrinogen, fibrin, fibrinolysis.
14. week 19. 5.	Biochemistry of blood cells. Molecular principles of immunochemistry.
15. week 26. 5.	Make-up lessons

Recommended literature: see the first lecture