BIOCHEMISTRY II **LECTURES**

GENERAL MEDICINE

VSBC041p

Date	
1. week 19. 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 26. 2.	The biosynthesis of steroid hormones. The synthesis of calciols. Synthesis of thyroidal hormones.
3. week 5. 3.	The integration of intermediary metabolism at the tissue and organ level.
4. week 12. 3.	The metabolic functions of the liver. Catabolism of hemoglobin, bilirubin metabolism. Metabolism of iron.
5. week 19. 3.	Biotransformation of xenobiotics. Two phases of biotransformation, typical reactions, cytochrome P450. Metabolism of ethanol.
6. week 26. 3.	Control of metabolism. Mechanism of hormone and neurotransmitter action. Types of cell membrane receptors, intracellular effects of ligand binding; intracellular receptors.
7. week 2. 4.	Metabolism of nervous tissue. Neurosecretion. The biosynthesis and inactivation of neurotransmitters, neurotransmission across synapses. Cholinergic, adrenergic, and (inhibitory) gabaergic receptors.
8. week 9. 4.	Water and Na^+, K^+ ions balance, osmolality of ECF, oncotic pressure
9. week 16. 4.	Metabolism of calcium , phosphates and fluorine. Hormones involved in their metabolism.
10. week 23. 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 30. 4.	Normal renal functions. Glomerular filtration. Tubular resorption and secretion.
12. week 7. 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 14. 5.	The major proteins of blood plasma. Endothelial cells. The blood-coagulation cascade, inhibition of clotting. Fibrinogen, fibrin, fibrinolysis.
14. week 21. 5.	Biochemistry of blood cells. Molecular principles of immunochemistry.
15. week 28. 5.	Make-up lessons

Recommended literature: see the first lecture