



## Biochemistry exam subjects for the students of the Faculty Pharmacy (winter session, 2023-2024)

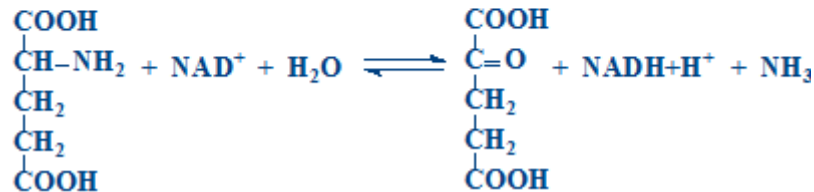
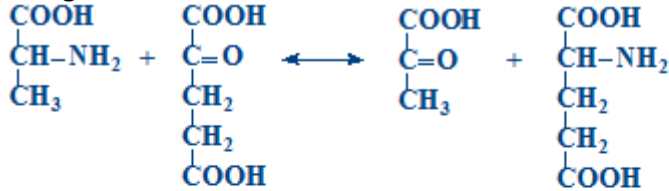
- 1.1 Select the acidic amino acids:
- 1.1 Select the basic amino acids:
- 1.1 Select the biopolymer:
- 1.1 Select the correct statements about the chemical compound: valin, glycine
- 1.1 Select the correct statements about the tripeptide: Gln-Lys-Asp; Ala- Gln-Trp
- 1.1 Select the hydrophobic non-polar amino acids:
- 1.1 What compound is the structural unit of simple proteins?
- 1.1 What compounds contain nitrogen?
- 1.1 What compounds contain OH-groups?
- 1.1 What compounds contain SH-groups?
- 1.1 What type of amino acids is present in proteins?
- 1.1 Which compounds contain free amino group (-NH<sub>2</sub>)?
- 1.1 Which compounds contain free carboxylic groups (-COOH)?
- 1.2 Classification of proteins - select the correct statement:
- 1.2 Globulins - select the correct statement:
- 1.2 Histones- select the correct statements:
- 1.2 Protein functions are:
- 1.2 Select the correct statement about the tertiary structure of proteins:
- 1.2 Select the correct statements about hemoglobin (Hb):
- 1.2 Select the correct statements about the primary structure of proteins:
- 1.2 Select the correct statements about the secondary structure of protein -  $\beta$ -structure:
- 1.2 Select the correct statements about the secondary structure of protein -  $\alpha$ -helix:
- 1.2 Select the correct statements regarding albumins:
- 1.2 Select the correct statements:
- 1.2 The primary structure of proteins - select the correct statement:
- 1.2 The quaternary structure of proteins - select the correct statements:
- 1.2 The secondary structure of proteins - select the correct statement:
- 1.2 The tertiary structure of proteins - select the correct statements:
- 1.3 Conditions for protein precipitation are:
- 1.3 Isoelectric point (pI) - select the correct statement:
- 1.3 Protein solubility - select the correct statement:
- 1.3 Stability of the protein in a solution is determined by:
- 1.3 The total charge of a protein depends on:
- 1.3 What functional groups of proteins have acidic properties?
- 1.3 What functional groups of proteins have basic properties?
- 1.3 What happens during the denaturation of protein molecule?
- 1.4 Active center (AC) of an enzyme - select the correct statements:
- 1.4 Active center of enzyme is:
- 1.4 Allosteric center - select the correct statement:
- 1.4 For enzymes the following statements are correct:
- 1.4 Hydrolyses - select the correct statement:



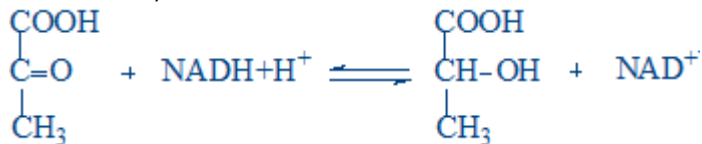
- 1.4 Isomerases - select the correct statement:
- 1.4 Ligases - select the correct statements:
- 1.4 Lyases - select the correct statement:
- 1.4 NAD<sup>+</sup> coenzyme - select the correct statements:
- 1.4 NADP<sup>+</sup> coenzyme - select the correct statement:
- 1.4 NADP<sup>+</sup> coenzyme - select the correct statement:
- 1.4 Oxido-reductases - properties:
- 1.4 Select correct statements regarding the cofactors:
- 1.4 Select the correct statement about allosteric enzymes:
- 1.4 Select the correct statement about the chemical nature of enzymes:
- 1.4 Select the correct statements about coenzymes FAD and FMN:
- 1.4 Select the correct statements about succinate dehydrogenase (SDH) and its activity regulation:
- 1.4 Select the correct statements about the chemical compound: structure of vitamine B2
- 1.4 Select the correct statements about the chemical compound: B1
- 1.4 Select the correct statements about the chemical compound: Nicotinamide (vit. PP)
- 1.4 Select the correct statements about the enzyme classification:
- 1.4 Select the correct statements about the enzyme that catalyzes the chemical reaction: Decarboxilation of Histidine
- 1.4 Select the correct statements about the enzyme that catalyzes the chemical reaction: Glucose-6-P + H<sub>2</sub>O → Glucose + H<sub>3</sub>PO<sub>4</sub>
- 1.4 Select the correct statements about the enzyme that catalyzes the chemical reaction: Glucose-6-P ↔ Glucose-1-P
- 1.4 Select the correct statements about the enzyme that catalyzes the chemical reaction: Malate + NAD<sup>+</sup> ↔ OA + NADH + H<sup>+</sup>
- $$\begin{array}{c} \text{COOH} \\ | \\ \text{CH-OH} \\ | \\ \text{CH}_2 \\ | \\ \text{COOH} \end{array} + \text{NAD}^+ \rightleftharpoons \begin{array}{c} \text{COOH} \\ | \\ \text{C=O} \\ | \\ \text{CH}_2 \\ | \\ \text{COOH} \end{array} + \text{NADH} + \text{H}^+$$
- 1.4 Select the correct statements about the enzyme that catalyzes the chemical reaction: Fumarate + H<sub>2</sub>O ↔ Malate
- 1.4 Select the correct statements about the enzyme that catalyzes the chemical reaction: Succinate + FAD → Fumarate + FAD.H<sub>2</sub>
- $$\begin{array}{c} \text{COOH} \\ | \\ \text{CH}_2 \\ | \\ \text{CH}_2 \\ | \\ \text{COOH} \end{array} + \text{FAD} \rightleftharpoons \begin{array}{c} \text{COOH} \\ | \\ \text{CH} \\ || \\ \text{HC} \\ | \\ \text{COOH} \end{array} + \text{FADH}_2$$
- 1.4 Select the correct statements about the enzyme that catalyzes the chemical reaction: Glu + NH<sub>3</sub> + ATP → Gln + ATP + H<sub>3</sub>PO<sub>4</sub>
- 1.4 Select the correct statements about the enzyme that catalyzes the chemical reaction: Asp + 2-oxoglutarate ↔ OA + Glu
- 1.4 Select the correct statements about the enzyme that catalyzes the chemical reaction: Histidine → Histamine + CO<sub>2</sub>



1.4 Select the correct statements about the enzyme that catalyzes the chemical reaction: Ala+ $\alpha$ -ketoglutarate $\leftrightarrow$ Pyruvate+Glu



1.4 Select the correct statements about the enzyme that catalyzes the chemical reaction: Lactate +NAD $\leftrightarrow$ Pyruvate+NADH+H $^+$



1.4 Select the correct statements about the substrate:

1.4 The properties that are common for all enzymes:

1.4 Transferases- select the correct statement:

1.4 What enzyme has stereochemical specificity?

1.5 Mechanisms of enzyme activation are:

1.5 Non-competitive inhibition feature is:

1.5 Select the correct statement about pepsin and the mechanism of its activity regulation:

1.5 Select the correct statement about the allosteric inhibition:

1.5 Select the correct statements about competitive inhibition:

1.5 Select the correct statements about the presented image:

1.5 The activation of the enzymes is possible by:

1.5 The characteristics of competitive inhibition (CI):

1.5 Thermolability of enzymes - select the correct statements:

1.6 Select chemical processes that involves chemical compound:

1.6 Select the chemical process that involves coenzyme A:

2.1 Choose the correct statement about nucleosome:

2.1 Choose the correct statement about rRNA:

2.1 Choose the correct statement about tRNA:

2.1 Choose the correct statements about DNA nucleotide composition - complementarity laws:

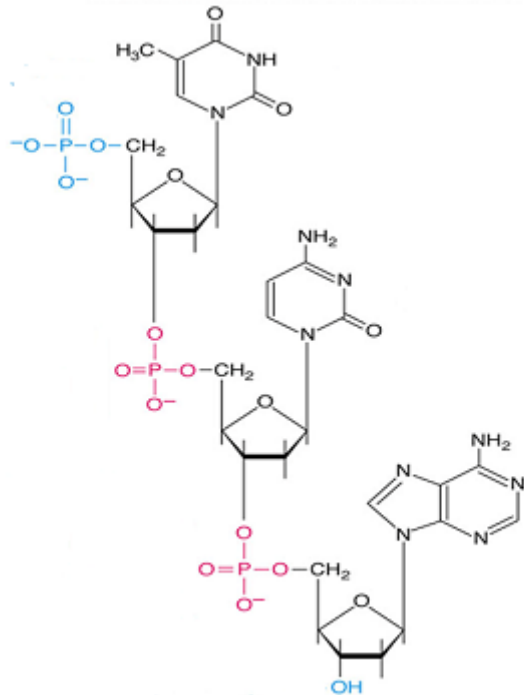
2.1 Choose the correct statements about mRNA:

2.1 Choose the correct statements about RNA:

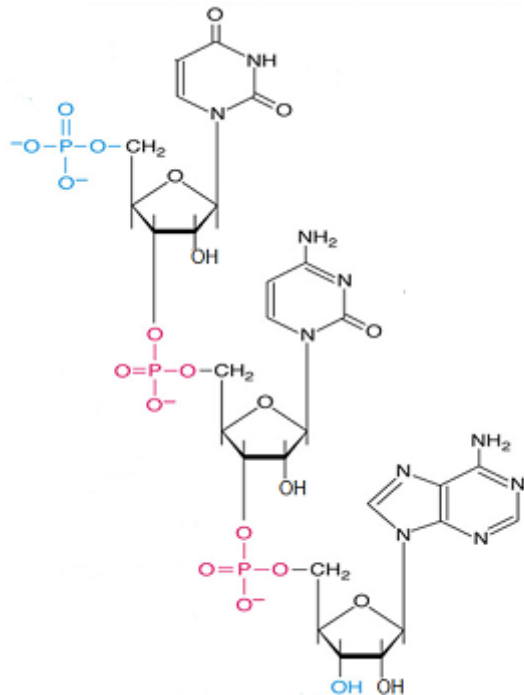
2.1 Choose the correct statements about the secondary structure of DNA:

2.1 Choose the correct statements about the secondary structure of DNA:

2.1 Choose the correct statements about the structure shown in the picture: Fragment of DNA



2.1 Choose the correct statements about the structure shown in the picture: Fragment of RNA



2.1 Choose the correct statements about the structure shown in the picture: A=T

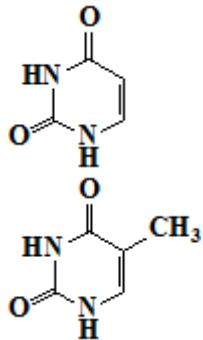
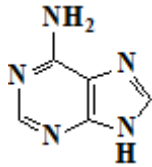
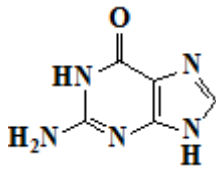
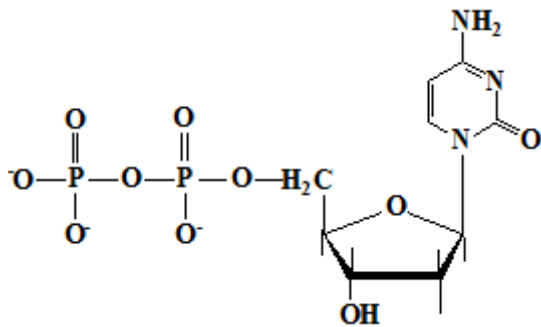
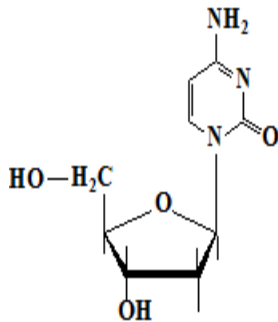
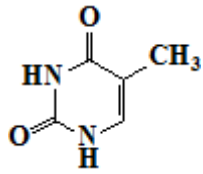
2.1 Choose the correct statements about the structure shown in the picture:

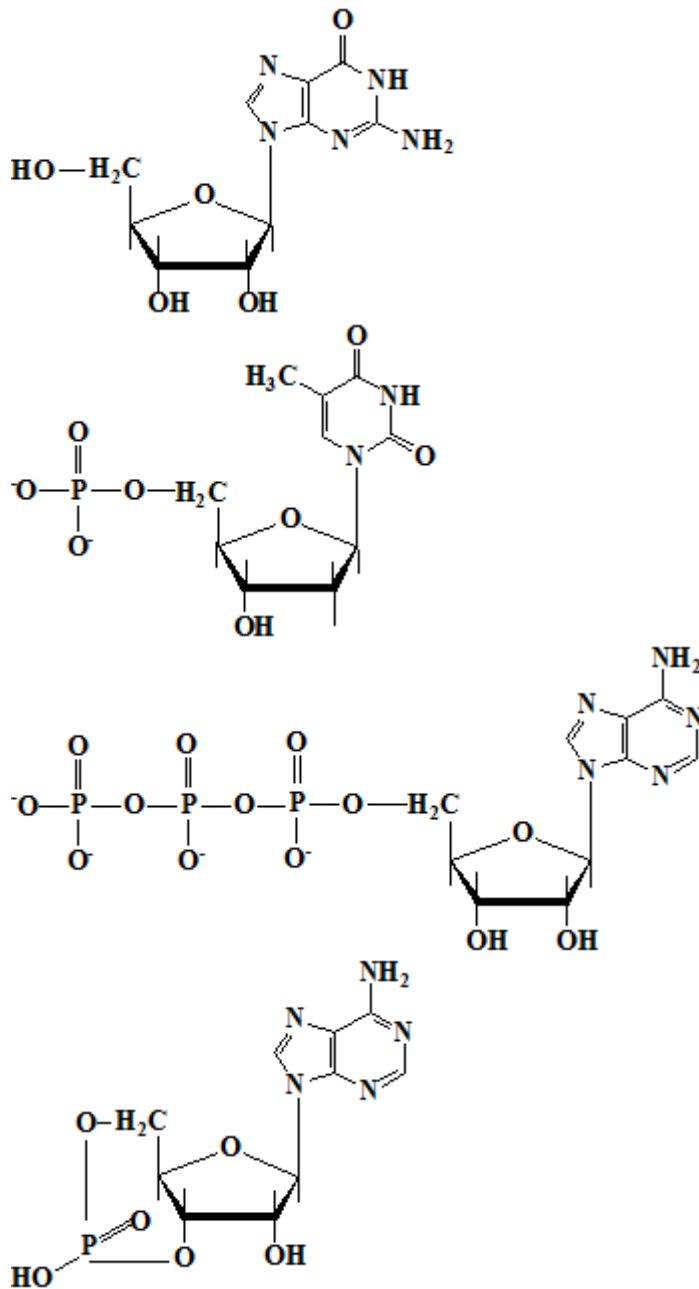
2.1 Choose the type of chemical bond that is not present in nucleic acids:

2.1 Histones - select the correct statements:

2.1 Select the correct statement about DNA structure:

2.1 Select the correct statement about the chemical structure:





2.1 Structural components of DNA are:

2.1 Structural components of RNA are:

2.1 The major nitrogenous bases in DNA are:

2.1 The major nitrogenous bases in DNA are:

2.1 The major nitrogenous bases in RNA are:

2.1 The secondary structure of DNA:

2.2 A common feature of the DNA and RNA biosynthesis is:

2.2 Choose the correct statement about RNA biosynthesis - transcription:

2.2 Choose the correct statements about RNA biosynthesis - transcription:

2.2 DNA biosynthesis requires:

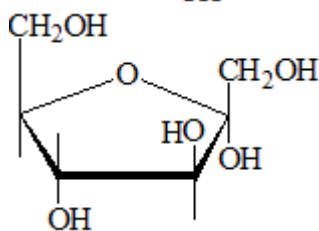
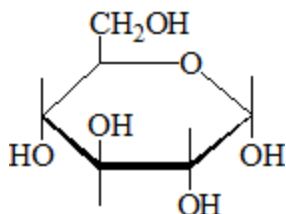
2.2 DNA replication - select the correct statements:



- 2.2 Okazaki fragments - select the correct statements:
- 2.2 Select the enzymes of the DNA-replicase complex:
- 2.2 Select the enzymes of the DNA-replicase complex:
- 2.3 Choose the correct statements about aminoacyl-tRNA-synthetases:
- 2.3 Choose the correct statements about the genetic code:
- 2.3 Elongation stage of the protein biosynthesis requires:
- 2.3 Elongation step of translation is characterized by:
- 2.3 Enzyme repression - select the correct statement:
- 2.3 Initiation of protein synthesis requires:
- 2.3 The structure and function of ribosomes - select the correct statements:
- 2.3 Which of the following compounds can regulate gene expression in humans?
- 3.1 Choose the substrate phosphorylation reaction from the Krebs cycle:
- 3.1 Metabolism regulation - select the correct statements:
- 3.1 Which of the listed substances are high-energy compounds?
- 3.1 Anabolism - what statement characterizes it?
- 3.1 Anapleroti reactions - choose the correct statement:
- 3.1 Biological oxidation:
- 3.1 Catabolic and anabolic pathways - choose the correct statements:
- 3.1 Catabolism - which statement is characterizing it?
- 3.1 Choose the coenzyme of the pyruvate dehydrogenase complex:
- 3.1 Choose the coenzyme that is necessary for normal functioning of the Krebs cycle enzymes:
- 3.1 Choose the coenzymes of the pyruvate dehydrogenase complex:
- 3.1 Choose the correct statements about the metabolic pathways:
- 3.1 Choose the correct statements regarding the reaction:
- 3.1 Choose the metabolism functions:
- 3.1 Choose the NAD<sup>+</sup>-dependent dehydrogenases (DH):
- 3.1 Choose the substrate phosphorylation reaction from the Krebs cycle:
- 3.1 Choose the vitamin that is a structural element of a coenzyme from the pyruvate dehydrogenase complex:
- 3.1 Choose the vitamin that is necessary for normal activity of Krebs cycle enzymes:
- 3.1 Choose the vitamins that are components of the coenzymes from the pyruvate dehydrogenase complex:
- 3.1 Choose the vitamins that are necessary for normal activity of Krebs cycle enzymes:
- 3.1 Citrate synthase - select the correct statements:
- 3.1 Free energy ( $\Delta G$ ) - select the correct statements:
- 3.1 Krebs cycle - select the correct statements:
- 3.1 Krebs cycle - which statement characterizes the process?
- 3.1 Metabolism - which statements are characterizing it?
- 3.1 Polyzymatic complex pyruvate dehydrogenase (PDH) - choose the correct statements:
- 3.1 Select the correct statements about metabolism:
- 3.1 Succinate dehydrogenase:
- 3.1 The reaction of oxidative decarboxylation of pyruvate is the following:
- 3.1 The role of the pyruvate dehydrogenase complex (PDHc):
- 3.1 The speed of the metabolic processes:
- 3.2 ATP synthase - select the correct statements:



- 3.2 Consumption of the free energy ( $\Delta G$ ) of the electron transporting chain:
- 3.2 Cytochromes - select the correct statement:
- 3.2 Oxidative phosphorylation - select the correct statements:
- 3.2 Oxido-reduction potential ( $E_o$ ) of the redox systems of the electron transporting chain (ETC):
- 3.2 Phosphorylation ratio (P/O) - select the correct statements:
- 3.2 Select the ATP synthase inhibitor:
- 3.2 Select the correct statements about the electron transporting chain complex III (CoQH<sub>2</sub>-cytochrome c reductase):
- 3.2 Select the process that occurs in the inner mitochondrial membrane:
- 3.2 Select the processes that occur in the mitochondrial matrix:
- 3.2 The end products of the electron transporting chain are:
- 3.3 Cytochrome P450:
- 3.3 Microsomal oxidation - choose the correct statements:
- 4.1 Choose the carbohydrates that are specific for humans:
- 4.1 Choose the correct statements regarding the following compound: Fructose
- 4.1 Choose the functions of carbohydrates:
- 4.1 Digestion of carbohydrates - select the enzymes that are involved and their properties:
- 4.1 Disaccharides - which statements are correct regarding their properties?
- 4.1 Glucose absorption from the small intestine:
- 4.1 Glycogen - select the correct statements:
- 4.1 Homopolysaccharides - select the correct statements:
- 4.1 Monosaccharides are:



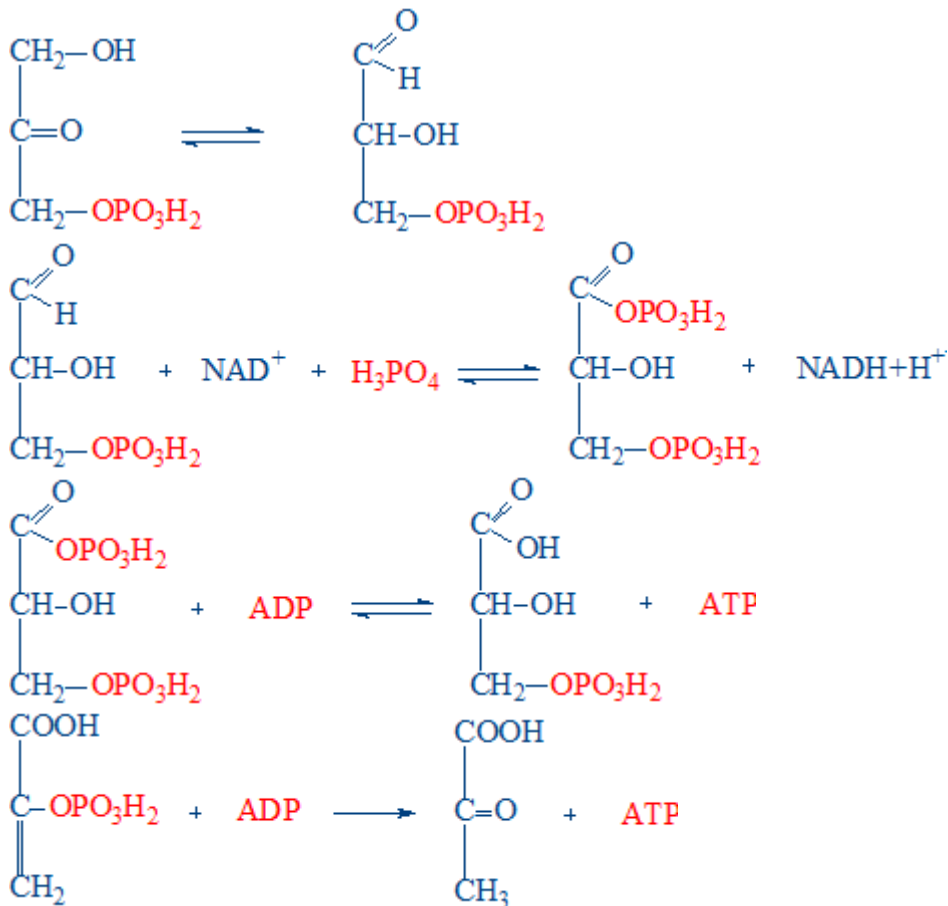
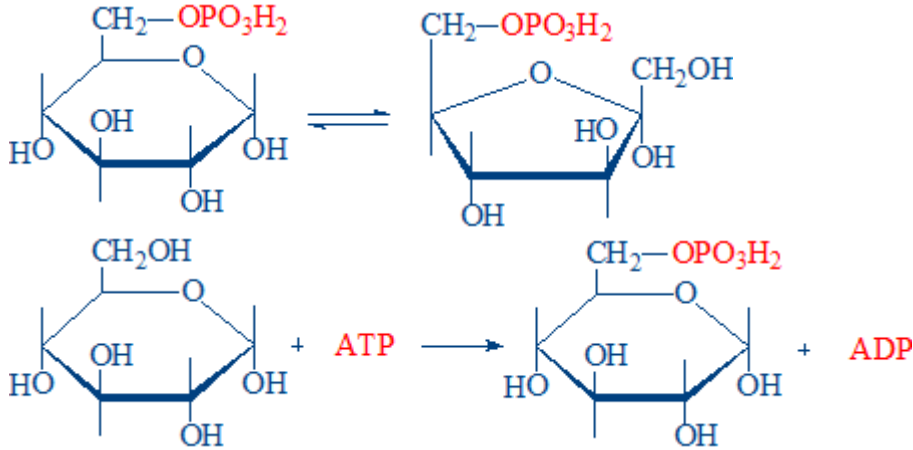
- 4.1 The following statements about monosaccharides are true:
- 4.2 1,6-glycosidic bond formation in glycogen (glycogenogenesis):
- 4.2 Breaking down of 1,6-glycosidic bonds of glycogen (glycogenolysis):
- 4.2 Choose the enzymes of glycogenogenesis:
- 4.2 Choose the enzymes of glycogenolysis:
- 4.2 Glucose-6-phosphate obtained from glycogen in skeletal muscles can be:
- 4.2 Glucose-6-phosphate obtained from glycogen in the liver can be:
- 4.2 Glycogen phosphorylase - select the correct statements:
- 4.2 Glycogen synthase - select the correct statements:
- 4.2 Glycogenogenesis - select the correct statements about glycogen synthase:
- 4.2 Glycogenolysis - select the correct statements:
- 4.2 Hormonal regulation of glycogenolysis - choose the correct statements:





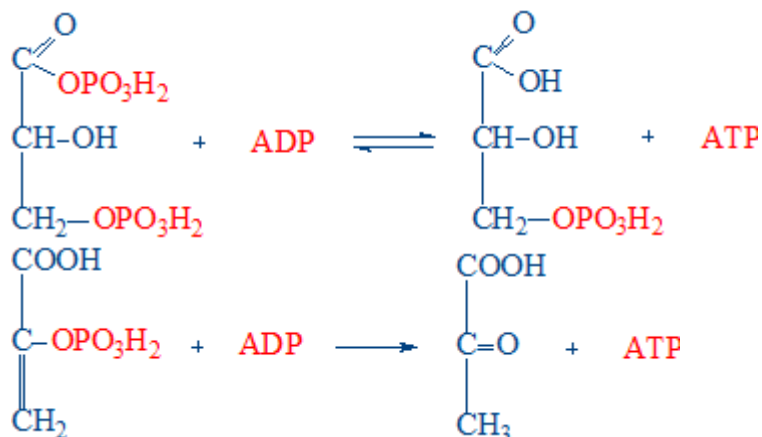
4.2 The chemical reaction is characterized by the following statements:

4.3 Glycolysis - select the the reaction:

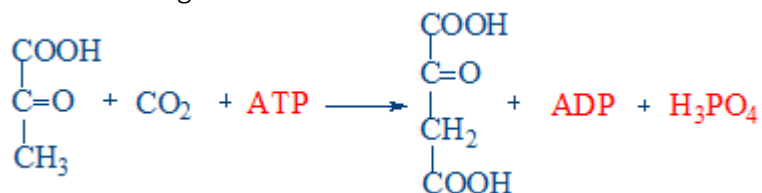


4.3 Choose the compounds that serve as substrates for gluconeogenesis:

4.3 Choose the reactions of substrate level phosphorylation:



4.3 Gluconeogenesis - choose the correct statements:



4.3 Gluconeogenesis - select the correct statements:

4.3 Glycolysis - select the correct statements:

4.3 Glycolysis is activated by:

4.3 Glycolysis is inhibited by:

4.3 Hexokinase - select the correct statements:

4.3 Hormonal regulation of gluconeogenesis:

4.3 Hormonal regulation of glycolysis - select the correct statement regarding hormone influence:

4.3 How many ATP molecules are produced from complete oxidation of pyruvate?

4.3 How many ATP molecules are produced from complete oxidation of lactate?

4.3 Pathways of pyruvate usage in human cells are:

4.3 Select the correct statement about the following reaction:

4.3 The end products of anaerobic glycolysis are:

4.3 The end products of complete oxidation of glucose are:

4.3 The overall reaction of anaerobic glycolysis is:

4.3 Which enzymes do not participate in aerobic oxidation of glucose?

4.4 Insulin causes the following effects:

4.4 Choose the reactions of the oxidative stage of pentose-phosphate pathway:

4.4 Diseases accompanied by hyperglycemia are:

4.4 Enzymes necessary for galactose metabolism are:

4.4 Enzymes required for fructose metabolism in the liver are:

4.4 Functions of pentose-phosphate pathway are:

4.4 Hormonal regulation of glycemia:

4.4 Hyperglycemia may be determined by:

4.4 Hypoglycemia can be determined by:

4.4 Initial compounds for pentose-phosphate pathway are:

4.4 Pentose-phosphate pathway of glucose oxidation - select the correct statements:

4.4 Reaction: Pyruvate + NADH+H+  $\leftrightarrow$  lactate + NAD+



4.4 The end products of the oxidative phase of pentose-phosphate pathway are:

5.1 According to their biological role lipids are divided into the following classes:

5.1 Acylglycerols - select the correct statements:

5.1 Bile acids - select the correct statements:

5.1 Chylomicrons - select the correct statements:

5.1 Complete digestion of the triglycerides in the gastrointestinal tract requires:

5.1 Dietary fat digestion in adults:

5.1 Functions of lipids are:

5.1 Glycerophospholipids - choose the correct statements:

5.1 HDL - select the correct statement:

5.1 Hydrolysis of dietary lipids leads to formation of:

5.1 In human cells and tissues the following fatty acids prevail:

5.1 LDL - select the correct statements:

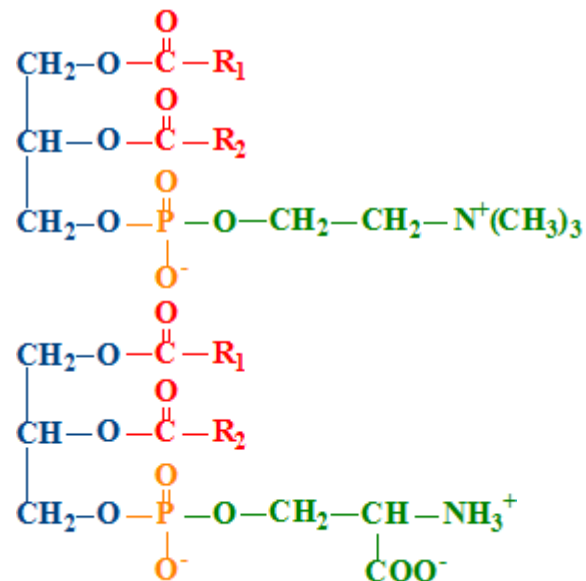
5.1 Lipids are essential components of the diet, because:

5.1 Lipids are:

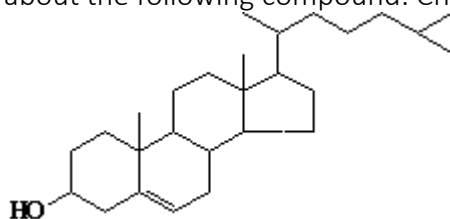
5.1 Lipolytic enzyme action in the gastrointestinal tract:

5.1 Main properties of the biologic membranes are:

5.1 Phosphatidylcholine, phosphatidylserine and phosphatidylethanolamine - choose the correct answers:



5.1 Phosphatidylethanolamines - choose the correct answers: 5.1 Select the correct statement about the following compound: Cholesterol



5.1 The following fatty acids are essential for the humans:

5.1 The mechanism of dietary lipids digestion products absorption in the gastrointestinal tract:

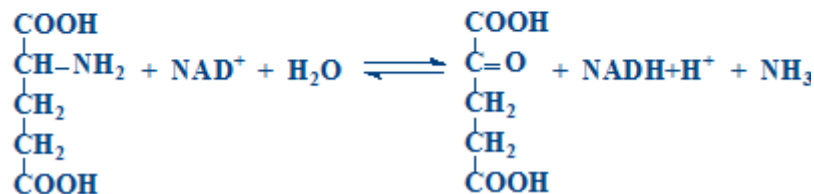
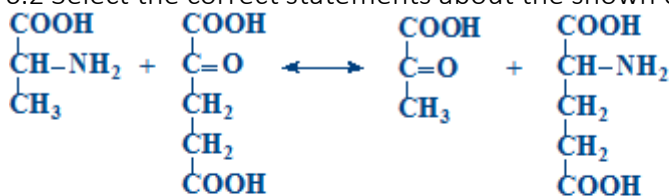
5.1 The products of lipid digestion absorbed in the intestine:



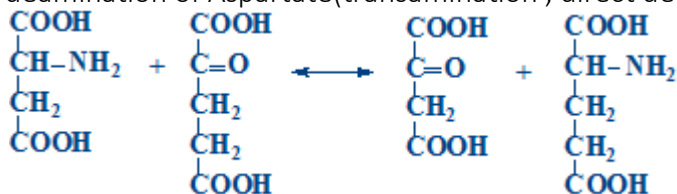
- 5.1 The proteins of biological membranes:
- 5.1 VLDL - select the correct statement:
- 5.2 Acetoacetate - select the correct statements about the compound:
- 5.2 Activation of fatty acids (FA) (in beta-oxidation of fatty acids):
- 5.2 Activation of fatty acids (FA) during beta-oxidation of fatty acids - select the correct reaction:
- 5.2 Beta-hydroxy-beta-methyl-glutaryl-CoA can be used for:
- 5.2 Beta-oxidation involves a sequence of four reactions. Their correct order is the following:
- 5.2 Beta-oxidation of fatty acids (FA) - choose the correct statements:
- 5.2 Correct statements about the ketone bodies are:
- 5.2 How can be used acetyl-CoA?
- 5.2 How many turns are necessary (1), how many molecules of acetyl-CoA (2) and of ATP (3) are produced during the complete oxidation of stearic acid (C18):
- 5.2 In one turn of beta-oxidation the fatty acid undergoes the following changes:
- 5.2 Ketone bodies - select the chemical compounds that belong to them:
- 5.2 Ketonemia - select the correct statement:
- 5.2 Select the 4th reaction of beta-oxidation and the enzyme that catalyzes it:
- 5.2 Select the correct statement about the compound: Acetoacetate
- $$\text{CH}_3-\underset{\text{O}}{\underset{\parallel}{\text{C}}}-\text{CH}_2-\text{COOH}$$
- 5.2 Transport of fatty acids (FA) from cytoplasm into the mitochondrial matrix during beta-oxidation:
- 5.2 Utilization of ketone bodies in tissues - choose the correct statements:
- 5.3 Acetyl-CoA transport from mitochondria into cytosol during fatty acid biosynthesis:
- 5.3 Biosynthesis of fatty acid - select the correct statements:
- 5.3 Biosynthesis of fatty acids - choose the correct statements:
- 5.3 Differences between fatty acid oxidation and biosynthesis:
- 5.3 Fatty acid synthase - which statements characterize it?
- 5.3 NADPH is the donor of reducing equivalents (H+) in fatty acid synthesis. Which processes is the compound produced in?
- 5.3 Reaction of beta-ketoacyl-ACP reduction during biosynthesis of fatty acids:
- 5.3 Reactions of the biosynthesis of fatty acids:
- 5.4 Biosynthesis of cholesterol - select the correct statements:
- 5.4 Rate-limiting reaction of cholesterol synthesis is:
- 5.4 Regulation of cholesterol biosynthesis:
- 5.4 The common intermediary compound of triglycerides and phosphoglycerides synthesis is:
- 5.5 Atherosclerosis - select the correct statements:
- 5.5 Liposoluble vitamins - choose the correct statement:
- 5.5 Metabolism of vitamin D:
- 5.5 Precursor of eicosanoids is the following chemical compound:
- 5.5 Select the correct statements about calcitriol:
- 5.5 Vitamin A - select the correct statement:
- 5.5 Vitamin D - select the correct statement:
- 5.5 Vitamin E - select the correct statements:
- 5.5 Vitamin K - select the correct statements:
- 6.1 Absorption of amino acids (AA) - select the correct statements:

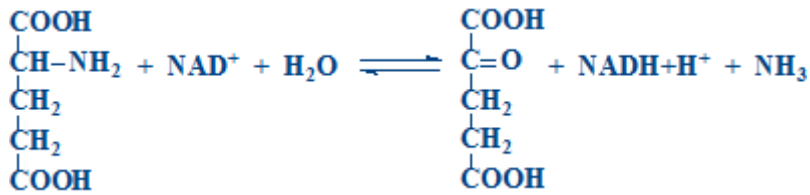


- 6.1 Absorption of amino acids (AA):
- 6.1 Aminopeptidases - select the correct statements:
- 6.1 Biological functions of proteins are:
- 6.1 Biological functions of proteins are:
- 6.1 Biological value of proteins is determined by the essential amino acids including the following one:
- 6.1 Carboxypeptidases - select the correct statements:
- 6.1 Chymotrypsin - select the correct statements:
- 6.1 Equilibrated nitrogen balance:
- 6.1 HCl functions in the digestion of proteins are:
- 6.1 HCl functions in the digestion of proteins are:
- 6.1 Negative nitrogen balance - what statements characterize it?
- 6.1 Neutralization of amino acids putrefaction products is characterized by:
- 6.1 Pepsin - select the correct statements regarding the compound:
- 6.1 Pepsin properties are:
- 6.1 Positive nitrogen balance - choose the correct statements:
- 6.1 Putrefaction of amino acids in the intestine:
- 6.1 Select the semi-essential amino acids from the following one:
- 6.1 Trypsin - select the correct statements:
- 6.2 Alanine aminotransferase (ALT) - select the statements that characterize it:
- 6.2 Amino acid transaminases:
- 6.2 Amino acid transamination (TA):
- 6.2 Aspartate aminotransferase (AST):
- 6.2 General pathways of amino acids catabolism are:
- 6.2 General types of amino acid deamination are:
- 6.2 Glutamate dehydrogenase - select the correct statements:
- 6.2 Glutamate dehydrogenase is a:
- 6.2 Select the correct statements about the shown chemical reaction:

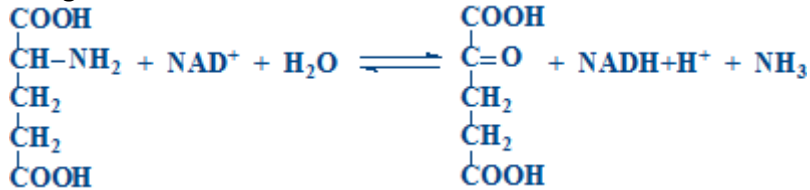


- 6.2 Select the correct statements about the shown chemical reactions: Reactions of nondirect deamination of Aspartate(transamination , direct deamination of Glu)

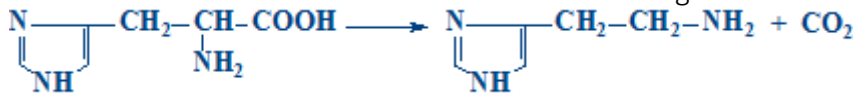




6.2 Select the correct statements regarding the following reaction: Glu+NAD+ + H2O↔α-ketoglutarate+NADH+H+ + NH3



6.3 Select the correct statements about the following chemical reaction: His→Histamine +CO2



6.3 The precursor of catecholamines is:

6.3 The precursor of histamine is:

6.4 Ammonia is obtained in the following processes:

6.4 How many ATP molecules are required for the synthesis of one urea molecule?

6.4 How many high-energy bonds are necessary for the synthesis of 100 molecules of urea?

6.4 NH3 can be used for the synthesis of:

6.4 NH3 can be used for the:

6.4 Renal excretion of ammonia:

6.4 Select ornithine cycle reactions:

6.4 Select ornithine cycle reactions:

6.4 Select the correct statements about the chemical reaction:

6.4 The end products of simple protein catabolism are:

6.4 The final products of complete NH3 detoxification are:

6.4 Urea cycle (first reaction):

6.4 Urea cycle enzymes are:

6.4 Ureagenesis - select the correct statements:

6.4 Ureagenesis:

6.5 Albinism:

6.5 Biosynthesis of glutamine (Gln):

6.5 Enzymes involved in amino acid catabolism:

6.5 Phenylalanine (Phe) and tyrosine (Tyr) are precursors of:

6.5 Phenylketonuria:

6.5 Protein deficiency:

6.5 Select the correct statements about the following compound:

6.5 Select the correct statements about the following compound:

6.5 Tetrahydrofolic acid (TFH):

6.5 Tetrahydrofolic acid (THF) is the acceptor and donor of the following groups:

6.5 Tetrahydrofolic acid (THF):

6.5 The following compound:

6.6 The final product of purine nucleotides catabolism is:



- 6.7 Catabolism of hemoglobin - select the correct statements regarding the process:
- 6.7 Causes of hepatic jaundice are the following:
- 6.7 Causes of jaundice are:
- 6.7 Conjugation of bilirubin - select the statements that characterize the process:
- 6.7 Heme biosynthesis - select the compounds required for the process:
- 6.7 Heme biosynthesis - select the correct statements about the first reaction of the process:
- 6.7 Heme biosynthesis - select the correct statements regarding the second reaction of the process:
- 6.7 Hemoglobin (Hb) - which statements characterize its structure?
- 6.7 Hemoglobin is involved in the following processes:
- 6.7 Hemoproteins - select the correct statements:
- 6.7 Indirect bilirubin - select the correct statements regarding the compound:
- 6.7 Posthepatic jaundice is caused by:
- 6.7 Prehepatic jaundice - select the statements that characterize the disorder:
- 6.7 Which proteins belong to the class of chromoproteins?
- 6.7.1 Choose the correct statements about blood transport of oxygen (O<sub>2</sub>):
- 6.7.1 How the exchange of O<sub>2</sub> and CO<sub>2</sub> occur in the lungs? Select the correct reactions:
- 6.7.1 How the exchange of O<sub>2</sub> and CO<sub>2</sub> occur in the tissues? Select the correct reactions.
- 6.7.1 Pathological forms of hemoglobin are:
- 6.7.1 Select the factors that determine the affinity of hemoglobin (Hb) for oxygen (O<sub>2</sub>):
- 6.7.1 What are the carbon dioxide blood transport forms?
- 6.7.1 What statement is correct regarding oxyhemoglobin?
- 6.7.1 Which statements are correct regarding hypoxia?
- 7.1 Which statements characterize the hormones?
- 7.1 Caffeine inhibits:
- 7.1 Cyclic AMP is:
- 7.1 Cytosolic-nuclear mechanism of action of hormones - select the correct statements:
- 7.1 Hormone receptors belong to the following chemical class:
- 7.1 Membrane-intracellular mechanism of hormone action - select the correct statements:
- 7.1 Membrane-intracellular mechanism of hormone action - select the correct statements:
- 7.1 Membrane-intracellular mechanism of hormones action mediated by cAMP is characterized by the following statements:
- 7.1 Phosphodiesterase:
- 7.1 Select second messengers of hormones:
- 7.1 Select the classes of hormones according to the structural classification:
- 7.1 Select the correct statements about the active form of Gs protein:
- 7.1 Select the correct statements about the membrane-intracellular mechanism of hormone action mediated by diacylglycerol (DAG) and inositol triphosphates (IP<sub>3</sub>):
- 7.1 Select the correct statements regarding adenylate cyclase:
- 7.1 Select the correct statements regarding Gs proteins:
- 7.1 Select the correct statements regarding protein kinase A:
- 7.1 Select the correct statements regarding the hormones:
- 7.1 Select the hormone that has membrane-intracellular mechanism of action:
- 7.1 What hormones have cytosolic-nuclear mechanism of action?
- 7.1 What hormones have cytosolic-nuclear mechanism of action?
- 7.1 Which hormones have cytosolic-nuclear mechanism of action?



- 7.1 Which of the following compound is biologic activ?
- 7.2 What statement is characterizing glucagon?
- 7.2 Catecholamine biosynthesis - select the correct statements:
- 7.2 Diabetes mellitus is characterized by:
- 7.2 Effects of insulin on protein metabolism are following:
- 7.2 Glucagon secretion is
- 7.2 Insulin secretion is activated by
- 7.2 Metabolic effects of somatotropin:
- 7.2 Prolactin - select the correct statements:
- 7.2 Select hormones that are synthesized in the adrenal cortex:
- 7.2 Select the adenohipophysis hormones:
- 7.2 Select the correct statements about steroid hormones:
- 7.2 Select the correct statements about the regulation of glucocorticoids synthesis and secretion:
- 7.2 Select the correct statements regarding iodothyronines:
- 7.2 Select the correct statements regarding oxytocin:
- 7.2 Select the correct statements regarding the biologic effects of the parathyroid hormone:
- 7.2 Select the correct statements regarding the biosynthesis of the pancreatic hormones:
- 7.2 Select the correct statements regarding the hormones of adenohipophysis:
- 7.2 Select the correct statements regarding the hormones that belong to the class of catecholamines:
- 7.2 Select the correct statements regarding the luteinizing hormone (LH):
- 7.2 Select the correct statments regarding adrenocorticotropin (ACTH):
- 7.2 Select the metabolic and physiologic effects of catecholamines:
- 7.2 Select the metabolic effects of glucagon:
- 7.2 Select the metabolic effects of insulin:
- 7.2 Select the metabolic effects of T3 and T4:
- 7.2 Select the statements that characterize glucagon:
- 7.2 Select the tropin-release inhibiting hormone (statin):
- 7.2 Select the tropin-releasing hormones (liberins):
- 7.2 Somatotropin (growth hormone) - select the correct statements regarding the compound:
- 7.2 Thyrotropin (TSH) - select the correct statements regarding the compound:
- 7.2 Vasopressin - select the correct statements about the compound:
- 7.2 What are correct statements regarding the hypothalamus hormones?
- 7.2 What statements are characterizing 1,25-dihydroxy-cholecalciferol - calcitriol?
- 7.2 Which are the metabolic effects of glucocorticoids?
- 7.2 Which are the metabolic effects of T3 and T4?
- 7.2 Which are the signs of thyroid hyperfunction?
- 7.2 Which are the signs of thyroid hypofunction in adults (myxedema)?
- 7.2 Which factors influence the synthesis and secretion of iodothyronines?
- 7.2 Which is the metabolic effect of calcitonin?
- 7.2 Which processes are stimulated by insulin?
- 7.2 Which statements are characterizing insulin?
- 7.2 Which statements are correct regarding the parathyroid hormone?
- 7.2 Which statements characterize the follicle stimulating hormone (FSH)?
- 7.3 Angiotensin II:





- 7.3 Hypocorticism (Addison's disease) is characterized by:
- 7.3 Select physiological effects of the following hormon:
- 7.3 Select the correct statements about the Cushing's syndrome:
- 7.3 Select the correct statements about the functions of the following hormone:
- 7.3 Select the correct statements about the mechanism of action of the following hormon:
- 7.3 Select the correct statements about the metabolic effects of the following hormon:
- 7.3 Select the correct statements regarding aldosterone synthesis and secretion:
- 7.3 Select the correct statements regarding the androgens:
- 7.3 Select the correct statements regarding the following hormone:
- 7.3 Select the correct statements regarding the medical usage of corticosteroids:
- 7.3 Select the sex hormones from the following one:
- 7.3 Which processes are stimulated in the kidney by the following hormone?
- 8.1 Azotemia occurs in following cases:
- 8.1 Buffering capacity of hemoglobin is determined by the following amino acid radical:
- 8.1 Buffering capacity of plasma proteins is determined by the following amino acids:
- 8.1 Fibrinogen - select the correct statements regarding the compound:
- 8.1 Functions of blood are the following one:
- 8.1 Hyperproteinemia. Which statements characterize the condition?
- 8.1 Metabolic acidosis can be caused by the following conditions:
- 8.1 Metabolic acidosis is present in the following diseases:
- 8.1 Metabolic alkalosis can be caused by the following conditions:
- 8.1 Plasma globulins. Which statements are correct regarding the compound?
- 8.1 Plasma proteins - select the correct statements:
- 8.1 Respiratory acidosis. Which condition can determine it?
- 8.1 Respiratory acidosis. Which diseases can determine it development?
- 8.1 Respiratory alkalosis. Which are the causes of the condition?
- 8.1 Select buffer system that is present only in the erythrocytes:
- 8.1 Select buffer systems that are present both in the plasma and erythrocytes:
- 8.1 Select form the following list the organic compounds of the blood:
- 8.1 Select from the following list the organic compounds of the blood:
- 8.1 Select the blood cells:
- 8.1 Select the buffer system that is present only in blood plasma:
- 8.1 Select the correct statements about the changes of plasma calcium:
- 8.1 Select the correct statements regarding the blood calcium:
- 8.1 Select the enzyme that is a marker of heart diseases:
- 8.1 Select the non-nitrogen containing organic compound in the blood:
- 8.1 Select the non-nitrogen containing organic compounds of the blood:
- 8.1 Select the non-protein nitrogen-containing compound of the blood:
- 8.1 Select the non-protein nitrogen-containing compound of the blood:
- 8.1 Serum albumin - select the correct statements regarding the compound:
- 8.1 Serum albumin - select the correct statements regarding the protein:
- 8.1 Serum albumin - select the correct statements:
- 8.1 What are the functions of plasma proteins?
- 8.1 Which of the following compounds is transported by the serum albumins?
- 8.1 Which systems are involved in the maintenance of the blood physiologic pH?



- 8.2 Conversion of fibrinogen to fibrin - select the correct statement:
- 8.2 Fibrinolysin - select the correct statements:
- 8.2 Heparin - select the correct statement regarding the compound:
- 8.2 Polymerization and stabilization of fibrin (clot formation) - select the correct statements regarding the process:
- 8.2 Prothrombin - select the correct statements regarding the compound:
- 8.2 Select platelet coagulation factors:
- 8.2 Select the anticoagulant compound:
- 8.2 Select the anticoagulants from the following compounds:
- 8.2 Select the clotting factor that initiates the extrinsic pathway of blood coagulation:
- 8.2 Select the clotting factors involved only in the intrinsic pathway of blood clotting:
- 8.2 Select the clotting factors that are involved only in the extrinsic pathway of blood coagulation:
- 8.2 Select the fibrinolytic system factor:
- 8.2 Select the fibrinolytic system factor:
- 8.2 Select the plasma clotting factor that initiate the intrinsic pathway of blood coagulation:
- 8.2 Select the the clotting factors that are involved both the intrinsic and extrinsic pathways of blood coagulation: :
- 8.2 Select the the clotting factors that are involved both the intrinsic and extrinsic pathways of blood coagulation:
- 8.2 Select the the clotting factors that are involved both the intrinsic and extrinsic pathways of blood coagulation:
- 8.2 The following compounds are involved in blood clotting (additional to plasma factors):
- 8.2 Thrombin - select the correct statements regarding the compound:
- 8.2 What is the role of vitamin K in blood clotting?
- 8.2 Which enzymes are transforming plasminogen into plasmin?
- 8.2 Which of the following are blood cells?
- 8.3 Functional classification of serum enzymes - select the correct classes:
- 8.3 Liver and protein metabolism:
- 8.3 Liver function is:
- 8.3 Select the enzyme that is marker of liver diseases:
- 8.3 Select the enzymes that are markers of heart diseases:
- 8.3 Select the enzymes that are markers of liver diseases:
- 8.3 Select the organo-specific enzyme of skeletal muscles:
- 8.3 The liver and carbohydrate metabolism:
- 8.3 The role of the liver in lipid metabolism:
- 9.1 Absorption of xenobiotics occurs through:
- 9.1 Conjugation of xenobiotics:
- 9.1 Conjugation of xenobiotics:
- 9.1 Conjugation of xenobiotics:
- 9.1 Conjugation of xenobiotics:
- 9.1 Liposomes as a form of transport of medicines:
- 9.1 Metabolism of drugs and toxins:
- 9.1 Metabolism of drugs and toxins:
- 9.1 Metabolism of drugs and toxins:



- 9.1 Metabolism of substances:
- 9.1 Microsomal oxidation:
- 9.1 Microsomal Oxidation:
- 9.1 Microsomal Oxidation:
- 9.1 Monooxygenase chain of microsomal oxidation:
- 9.1 Monooxygenase chain of microsomal oxidation:
- 9.1 Phases of xenobiotic metabolism:
- 9.1 Reductase chain of of microsomal oxidation:
- 9.1 Study of drugs metabolism is important for:
- 9.1 The distribution of xenobiotics depends on:
- 9.1 Xenobiotics introduced into the body can manifest: