	Histones - select the correct statements:
2	Select the correct statements about the chemical structure:
_	0
	NH
	N NH <sub>2</sub>
	O-H <sub>2</sub> C
	HO P O OH
3	A common feature of the DNA and RNA biosynthesis is:
4	Choose the correct statement about RNA biosynthesis - transcription:
5	Choose the correct statements about RNA biosynthesis - transcription:
6	DNA replication - select the correct statement:
7	DNA-polymerases I:
8	DNA-polymerases III select the correct statements:
9	How many high-energy bonds are needed to include an amino acid in a polypeptide chain during translation?
10	How many origin points (ORI) does prokaryotic DNA have?
11	Okazaki fragments - select the correct statement:
12	RNA polymerases - select the correct statements:
13	RNA-dependent DNA polymerase - select the correct statements:
14	Select the ARN polymerase subunit responsible for recognition of initiation sequences:
15	Select the compound that is required for DNA biosynthesis:
16	Select the correct statements about replication:
17	Select the enzyme that is linking the Okazaki fragments in DNA replication:
18	Select the enzymes of the DNA-replicase complex:
19	Select the enzymes of the DNA-replicase complex:
20	Select the posttranscriptional modification of mRNA:
21	Select the posttranscriptional modifications of tRNA:
22	Select the telomerase coenzyme:
23	What kind of process is catalyzed by telomerase
24	Select the enzymes that are required for DNA repair:
25	Activation of amino acids in the translation process - select the correct statement:
26	Choose the correct statement about the genetic code:
27	Choose the correct statement about the genetic code:
28	Choose the correct statements about aminoacyl-tRNA-synthetases:
29	Initiation of protein synthesis requires:
30	Select the components of the protein synthesis initiation complex in prokaryotes:
31	Select the compounds that are required for the elongation stage of the protein biosynthesis:

22	Calact the assument statements should must the last last last last last
32	Select the correct statements about mutations by deletion:
33	Select the correct statements about the protein biosynthesis regulation based on lac-operon example (enzyme induction):
34	Select the events that occur in the elongation step of translation:
35	Select the mechanisms by which molecular mutations occur:
36	Telomerase - select the correct statements:
37	The structure and function of ribosomes - select the correct statements:
38	Transversion mutations - select the correct statements:
39	Which of the following compounds can regulate gene expression in humans?
40	Which of the following processes are posttranslational modifications of proteins?
41	Which of the following processes are posttranslational modifications of the protein?
42	Which of the following processes are specific for the termination stage of protein biosynthesis?
43	Chose the lipids that are components of the cell membranes:
44	For monoenic fatty acid oxidation, as compared with the oxidation of saturated fatty acids, is additionally necessary:
45	For polyenic fatty acid oxidation, as compared with the oxidation of saturated fatty acids, is additionally necessary:
46	How many β-oxidation cycles (1), acetyl-CoA molecules (2) and ATP molecules are formed during the complete oxidation of one molecule of stearic acid?
47	In the last cycle of oxidation of fatty acids with an odd number of carbon atoms, propionyl-CoA is formed. Select its further transformation:
48	Regarding the oxidation of unsaturated fatty acids the following statements are correct:
49	Regarding $\beta$ -oxidation of fatty acids (FA) with an even number of carbon atoms, the following statements are correct:
50	Regarding $\beta$ -oxidation of fatty acids (FA) with an even number of carbon atoms, the following statements are correct:
51	Select the correct statements about the following chemical reaction:  R—COOH + HSCoA + ATP   R—C—SCoA + AMP + PP <sub>i</sub>
52	Select the correct statements about the following chemical reaction:  R—COOH + HSCoA + ATP   R—C—SCoA + AMP + PP <sub>i</sub>
53	Select the correct statements about ketone bodies:
54	Select the correct statements about following chemical reaction:
	$\begin{array}{c} R-CH_2-CH_2-C-SCoA + FAD \longrightarrow R-C-C-SCoA + FADH_2 \\ O & H & O \end{array}$
55	Select the correct statements about following chemical reaction:  H  R-C=C-C-SCoA + H <sub>2</sub> O   H  OH  OH  OH
56	Select the correct statements about the following chemical reaction:  R-CH-CH <sub>2</sub> -C-SCoA + NAD <sup>+</sup> R-C-CH <sub>2</sub> -C-SCoA + NADH+H <sup>+</sup> OH  OH
57	Select the correct statements about following chemical reaction:
L	L

	R-C-CH <sub>2</sub> -C-SCoA + HSCoA → R-C-SCoA + CH <sub>3</sub> -C-SCoA    Ö Ö Ö
58	Regarding the usage of ketone bodies in tissues, the following statements are correct:
59	Select conditions that may be accompanied by ketonemia:
60	Select the conditions that may be accompanied by ketonemia:
61	Select the correct statements about ketone bodies:
62	Select the correct statements regarding following chemical compound:  CH <sub>3</sub> -C-CH <sub>3</sub>
63	Select the correct statements regarding following chemical compound:  CH <sub>3</sub> -C-CH <sub>2</sub> -COOH
64	Select the correct statements regarding following chemical compound:  CH <sub>3</sub> -CH-CH <sub>2</sub> -COOH  OH
65	Select the possible causes of ketonemia in insulin-dependent diabetes mellitus:
66	Select the correct statements about cholesterol synthesis:
67	Select the correct statements about cholesterol synthesis:
68	Select the stages of cholesterol biosynthesis:
69	Regarding this chemical reaction, the following statements are correct:  CH <sub>3</sub> -C-SCoA + CH <sub>3</sub> -C-SCoA   CH <sub>3</sub> -C-C-CH <sub>2</sub> -C-SCoA + HS-CoA
70	Regarding this chemical reaction, the following statements are correct:
	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
71	Regarding this chemical reaction, the following statements are correct:  OH  OH
	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
72	Select the chemical compounds in the synthesis of which the following substance is an intermediate:
	0
	$ \begin{array}{c} \mathbf{CH_2} - \mathbf{O} - \mathbf{\ddot{C}} - \mathbf{R_1} \\ \mathbf{O} \end{array} $
	$CH-O-C-R_2$
	CH <sub>2</sub> -O-P-O-
73	Select the substance required for the following transformation:
	$ \begin{array}{ccc} \mathbf{C}\mathbf{H}_2 - \mathbf{O} - \mathbf{C} - \mathbf{R}_1 & \mathbf{C}\mathbf{H}_2 - \mathbf{O} - \mathbf{C} - \mathbf{R}_1 \end{array} $
	$\begin{array}{c} O \\ CH-O-C-R_2 \end{array} \longrightarrow \begin{array}{c} O \\ CH-O-C-R_2 \end{array}$
	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
74	Chylomicrons - choose the correct statements:
75	Chylomicrons:

76	HDL:
77	HDL:
78	LDL:
79	LDL:
80	VLDL:
81	VLDL:
82	According to their biological role lipids are divided into the following classes:
83	According to their physico-chemical properties lipids are divided into the following classes:
84	Acylglycerols - select the correct statements:
85	Bile acids - select the correct statements:
86	Cerebrosides - select correct statements regarding their structure:
87	Choose the correct statements about the action of lipolytic enzymes in the gastrointestinal tract:
88	Chylomicrons - select the correct statements:
89	Chylomicrons - select the correct statements:
90	Complete digestion of the triglycerides in the gastrointestinal tract requires:
91	Dietary fat digestion in adults:
92	Functions of lipids are:
93	Gangliosides - select the correct statements:
94	Glycerophospholipids - choose the correct statements:
95	Glycolipids:
96	HDL - select the correct statement:
97	Hydrolysis of dietary lipids leads to formation of:
98	In human cells and tissues the following fatty acids prevail:
99	LDL - select the correct statements:
10	Lipid components of the cell membranes are:
10	Lipids are essential components of the diet, because:
10	Lipids are essential components of the diet, because.
10	Lipids are:
10	Phosphatidylcholine and phosphatidylethanolamine - choose the correct answers:
3	1 nospilata y enomie and phospilata y ethanolamine enouse the correct answers.
10	Phosphatidylcholines - select the correct statements:
10	Phosphatidylcholines and phosphtidylethanolamines - select the correct statements:
5	2 nospinatoj and phospinaj remainatamines select the correct statements.
10	Phosphatidylethanolamines - choose the correct answers:
10	Select the correct statement about micelles:
7	Select the Correct Statement about miceries.

10	Select the correct statement about the following compound:
8	Y Y
10	HO
10 9	Sphingomyelines contain:
11	Sphingosine - select the correct answer:
0	spiningosine select the correct unswer.
11	Structural classification of lipids - select the specific classes:
1	•
11	The following fatty acids are essential for the humans:
2	
11	The mechanism of dietary lipids digestion products absorption in the gastrointestinal
3	tract: The products of lipid digestion absorbed in the intestine:
11 4	The products of lipid digestion absorbed in the intestine:
11	VLDL - select the correct statement:
5	VEDE select the correct statement.
11	VLDL catabolism - which statements characterize it?
6	
11	Which compounds have an acidic functional group in their structure?
7	
11 8	Which fatty acid has the lowest melting point?
11	Which fatty acid has the lowest melting point?
9	which ratty acid has the lowest melting point:
12	Select the chemical compounds whose precursor is the presented substance:
0	· · · · · · · · · · · · · · · · · · ·
12	Solor the chamical compounds whose procursor is the presented substance:
12	Select the chemical compounds whose precursor is the presented substance:
1	
	но
12	Select the chemical compounds whose precursor is the presented substance:
2	,
	но
12	Which statement is correct regarding the compound?
3	

```
HO-CH-CH=CH-(CH_2)_{12}-CH_3
          CH-NH-C-R
          CH<sub>2</sub>-OH
    Which statement is correct regarding the compound?
12
     CH2-O-C-R1
               P - O - CH_2 - CH_2 - N^+(CH_3)_3
    Which statement is correct regarding the compound?
12
    HO-CH-CH=CH-(CH_2)_{12}-CH_3
5
          CH-NH-C-R
          CH<sub>2</sub>-OH
    Which statement is correct regarding the compound?
12
     CH_2-O-C-R_1
     CH-O-C-R
     CH<sub>2</sub>-O-P -O-CH<sub>2</sub>-CH<sub>2</sub>-NH<sub>3</sub>+
    Which statement is correct regarding the compound?
12
                  -O-CH<sub>2</sub>-CH-NH<sub>3</sub>+
    Which is the correct statement regarding the substance?
12
                              COOH
                    OH
12
    Which is the correct statement regarding the substance?
                                 COOH
                    OH
    The product of the second reaction of beta-oxidation of fatty acids is:
13
0
```

13	Acetoacetate - select the correct statements about the compound:
1 13	Activation of fatty acids (FA) (in beta-oxidation of fatty acids):
2	Activation of fatty acids (FA) (in beta-oxidation of fatty acids).
13	Activation of fatty acids (FA) during beta-oxidation of fatty acids - select the correct
3	reaction:
13 4	Beta oxidation involves a sequence of four reactions. Choose their correct order:
13	Beta-oxidation of fatty acids (FA) - choose the correct statements:
13	Choose the correct statements about the ketone bodies:
6	Choose the correct statements about the ketone bodies.
13	How ca be used acetyl-CoA?
7	110 W ca de abea acetyr Corr.
13	How many turns are necessary (1), how many molecules of acetyl-CoA (2) and of ATP
8	(3) are produced during the complete oxidation of stearic acid (C18):
13	In one turn of beta-oxidation the fatty acid undergoes the following changes:
9	
14	Ketone bodies - select the chemical compounds that belong to them:
0	
14	Ketonemia - select the correct statement:
1	
14	Name the products of the third reaction of beta-oxidation and the enzyme that catalyzes
2	it:
14	Oxidation of fatty acids with odd number of carbon atoms - choose the correct
14	statements: Select compounds that can be synthesized from beta-hydroxy-beta-methyl-glutaryl-CoA:
4	Select compounds that can be synthesized from beta-nydroxy-beta-methyl-glutaryl-CoA.
14	Select the 4th reaction of beta-oxidation and the enzyme that catalyzes it:
5	below the 1th reaction of seta officiation and the enzyme that eathly 200 in
14	Select the additional substance necessary for the oxidation of polyunsaturated fatty acids
6	compared to saturated fatty acids:
14	Select the correct statement about the compound:
7	•
14	Select the correct statements about the utilization of ketone bodies in tissues:
8	
14	The products of Acyl-CoA dehydrogenation reaction of beta-oxidation of fatty acids are:
9	
15	The second reaction of beta-oxidation of fatty acids - select the correct statements:
0	
15 1	The third reaction of beta-oxidation of fatty acids - select the correct statement:
15	Transformation of acyl-CoA in the first reaction of beta-oxidation of fatty acids:
2	
15	Transport of fatty acids (FA) from cytoplasm into the mitochondrial matrix during beta-
3	oxidation:
15	Acetyl-CoA transport from mitochondria into cytosol during fatty acid biosynthesis:
4	
15	Activator (1) and inhibitor (2) of acetyl-CoA carboxylase - the regulating enzyme of
5	fatty acids synthesis:

15	Biosynthesis of fatty acids - choose the correct statements:
6	Biosynthesis of malonyl-CoA during the fatty acid synthesis:
15 7	Biosynthesis of majoryi-CoA during the fatty acid synthesis:
15	Choose the correct statements about fatty acid biosynthesis:
8	Choose the correct statements about fatty acid biosynthesis:
15	Differences between fatty acid oxidation and biosynthesis:
9	
16 0	Enzyme (1) and reaction product (2) of the transformation of enoyl-ACP during the biosynthesis of fatty acids are:
16 1	NADPH is a donor of reducing equivalents (H+) in the synthesis of fatty acids. In what processes is NADPH obtained?
16	Reaction of beta-ketoacyl-ACP reduction during biosynthesis of fatty acids:
2	
16	Reactions of the biosynthesis of fatty acids:
3	
16	Synthesis of one molecule of palmitic acid requires:
4	
16	The first cycle of the biosynthesis of saturated fatty acids with even number of carbon
5	atoms:
16	The reaction of beta-ketoacyl-ACP synthesis during the biosynthesis of fatty acids:
6	The remotion of commissions of range of
16	What is characteristic of fatty acid synthase?
7	The state of the systems of the system of the s
16	Which enzyme is involved in acetyl-CoA transport from mitochondria into cytosol during
8	fatty acid biosynthesis:
16	Which is the substrate of fatty acids synthesis (1) and the compound that is transporting it
9	from mitochondria into cytosol (2)?
17	Biosynthesis of cholesterol - select the correct statements:
0	
17	Biosynthesis of triacylglycerols - select the correct statement:
1	
17	Choose the correct statements about the synthesis of glycerophospholipids:
2	
17	During the triacylglycerols biosynthesis the phosphatidic acid is:
3	
17	Glycerol-3-phosphate is produced in the reaction of:
4	
17	Name the source of methyl group in the synthesis of phosphatidylcholine:
5	
17	Phosphatidylcholine can by synthesized by:
6	
17	Phosphatidylethanolamine can be synthesized by:
7	
17	Phosphatidylinositols - which statements characterize the chemical compounds?
8	
17	Phosphatidylserine synthesis - select the correct statements:
9	
18	Regulation of cholesterol biosynthesis:
0	

18	Select the rate-limiting reaction of cholesterol synthesis:
1	
18 2	The common intermediary compound of triglycerides and phosphoglycerides synthesis
18	is: Select the correct affirmation about fat-soluble vitamins:
3	Select the correct armination about rat-soluble vitainins.
18	Select the correct affirmation about fat-soluble vitamins:
4	
18 5	Which statement is correct regarding vitamin A?
18	Which statement regarding vitamin A is correct?
6	
18 7	Which vitamin is liposoluble?
18	Which vitamin is liposoluble?
8	Which Vitalian is aposoluble.
18	Which vitamin is liposoluble?
9	
19	Liposoluble vitamins - choose the correct statement:
0	
19	Metabolism of vitamin D:
1	
19 2	Select the correct statements about calcitriol:
19	Select the eicosanoid precursor from the following chemical compounds:
3	select the eleosanoid precursor from the following enemical compounds.
19	The following compounds belong to the class of eicosanoids:
4	
19	Vitamin A - select the correct statement:
5	
19	Vitamin D - select the correct statement:
6	Vitamin E. salast the compact statements.
19 7	Vitamin E - select the correct statements:
19	Vitamin K - select the correct statements:
8	
19	Absorption of amino acids (AA) - select the correct statement about the process:
9	_
20	Absorption of amino acids (AA) - select the correct statement about the process:
0	
20	Aminopeptidases - select the correct statements:
20	Biological functions of proteins are:
2	
20	Biological value of proteins is determined by the essential amino acids including the
3	following one:
20	Biological value of proteins is determined by the essential amino acids including the
4	following one:
20	Carboxypeptidases - select the correct statements:
5	

20	Chymotrypsin - select the correct statements:
20	Equilibrated nitrogen balance - select the correct statements:
7	Equinorated introgen barance - select the correct statements.
20	Gamma-glutamyl cycle - choose the correct statements:
8	
20 9	How are amino acids used in tissues?
21	Negative nitrogen balance - what statements characterize it?
0	regative introgen barance - what statements characterize it:
21	Pepsin - select the correct statement regarding the enzyme:
1	
21 2	Positive nitrogen balance - choose the correct statements:
21	Putrefaction of amino acids in the intestine - select the correct statements about the
3	process:
21	Select the semi-essential amino acids from the following one:
4	
21	Trypsin - select the correct statements:
5	
21	What are the biological functions of proteins?
6	What are the functions of IICl in the disection of metains?
21 7	What are the functions of HCl in the digestion of proteins?
21	What are the HCl functions in the digestion of proteins?
8	what are the free functions in the digestion of proteins:
21	What are the properties of pepsin?
9	r - r - r - r - r - r - r - r - r - r -
22	Which of the statements characterizes the neutralization of the amino acids putrefaction
0	products?
22	Alanine aminotransferase (ALAT) - select the statements that characterize it:
1	
22	Alanine transdeamination - select the correct statements:
2	A wine and described (TA)
22	Amino acid transamination (TA) - select the correct statements about the process:
22	Amino transferases - select the correct statements about the enzymes:
4	Timino danistorases sereet die correct statements about the chrymes.
22	Aminotransferases - select the correct statement about the enzyme:
5	
22	Aspartate aminotransferase (ASAT) - select the correct statements about the enzyme:
6	
22	Choose the general pathways of amino acids catabolism:
7	
22	Direct deamination (DA) of the amino acids - select the correct statements about the
8	Clutomate debudge general calest the correct statement.
22 9	Glutamate dehydrogenase - select the correct statement:
23	Indirect amino acid deamination (transdeamination) - select the correct statements about
$\begin{vmatrix} 23 \\ 0 \end{vmatrix}$	the process:
U	the process.

```
Select the class to which the enzyme glutamate dehydrogenase belongs
1
23
     Select the correct statement regarding the following reaction:
      COOH
2
                                              C=O + NADH+H+ NH<sub>3</sub>
      CH-NH<sub>2</sub> + NAD<sup>+</sup> + H<sub>2</sub>O =
      CH<sub>2</sub>
      CH<sub>2</sub>
      СООН
                                              COOH
23
     Select the correct statements about the amino acids deamination (DA):
3
23
     Select the correct statements about the following chemical reaction:
                                                     COOH
     COOH
                     COOH
4
                                       COOH
      CH-NH<sub>2</sub> +
                     Ç=O
                                        C=O
                                                     CH-NH<sub>2</sub>
     CH<sub>3</sub>
                                       CH<sub>3</sub>
                     ĊH<sub>2</sub>
                                                     CH<sub>2</sub>
                     ĊH2
                                                     CH<sub>2</sub>
                    СООН
                                                     СООН
23
     Select the correct statements about the following chemical reactions:
                      COOH
                                         COOH
                                                       COOH
5
                     C=0
      CH-NH<sub>2</sub> +
                                         C=0
                                                       CH-NH<sub>2</sub>
      CH<sub>2</sub>
                      CH<sub>2</sub>
                                         ĊH<sub>2</sub>
                                                       CH<sub>2</sub>
      COOH
                      ĊH<sub>2</sub>
                                         СООН
                                                       ĊH<sub>2</sub>
                                                       СООН
                      COOH
      COOH
      CH-NH_2 + NAD^+ + H_2O:
                                              C=O + NADH+H^+ + NH_3
      CH<sub>2</sub>
      CH<sub>2</sub>
                                              СООН
      COOH
23
     6.2 Select the correct statements about the following chemical reaction:
      COOH
                     COOH
                                         COOH
                                                       COOH
                     Ċ=O
      CH-NH<sub>2</sub> +
                                                       CH-NH2
      CH<sub>2</sub>
                     ĊH<sub>2</sub>
                                         ĊH<sub>2</sub>
                                                       CH<sub>2</sub>
      COOH
                      ĊH<sub>2</sub>
                                         COOH
                                                       ĊH<sub>2</sub>
                                                       COOH
                      COOH
     6.2 Select the correct statements regarding the following reaction:
23
                                              COOH
                                              C=O + NADH+H+ + NH<sub>3</sub>
      CH-NH_2 + NAD^+ + H_2O =
      CH<sub>2</sub>
                                              ĊH,
      CH<sub>2</sub>
      COOH
                                              COOH
     Transdeamination of aspartate. Select the reaction of the process (1) and the enzyme (2)
23
8
     that catalyzes the reaction:
23
     Transreamination of amino acids - select the correct statement:
9
24
      What are the general types of deamination of amino acid?
0
24
     Chemical reaction: R-CH2-NH2 + H2O + O2 → R-COH + NH3 + H2O2
1
     Decarboxilation of amino acids:
24
2
```

24	Select the correct statements about the following chemical reaction:
3	HO— CH2-CH-COOH → HO— CH2-CH2-NH2 + CO2
	$\rightarrow$ $NH_2$
24	HO HO
24	Select the correct statements about the following chemical reaction:  NH <sub>2</sub>
'	CH-NH <sub>2</sub> — CH <sub>2</sub> + CO <sub>2</sub>
	CH <sub>2</sub> CH <sub>2</sub>
	CH <sub>2</sub> CH <sub>2</sub>
24	соон соон
24 5	Select the correct statements about the following chemical reaction:
	$HO \longrightarrow CH_2-CH-COOH \longrightarrow HO \longrightarrow CH_2-CH_2-NH_2 + CO_2$
	HO NH <sub>2</sub>
24	Select the correct statements about the following chemical reaction:
6	HO CH <sub>2</sub> -CH-COOH CH <sub>2</sub> -CH <sub>2</sub> -CH <sub>2</sub> -NH <sub>2</sub> + CO <sub>2</sub>
	NH NH2
24	Select the correct statements about the following chemical reaction:
7	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
	NH NH2 NH
24	Select the correct statements about the following chemical reaction:  N——CH <sub>2</sub> —CH <sub>2</sub>
8	NH <sub>2</sub>
24	NH NH
24	Select the correct statements about the shown chemical reaction:
	$CH_2$ - $CH$ - $COOH$ $\longrightarrow$ $CH_2$ - $CH_2$ - $NH_2$ + $CO_2$
	NH NH2
25	Serotonin is synthesized from the following amino acid:
25	The precursor of catecholamines is:
1	The precursor of catecholammes is.
25	Which compound is the precursor of histamine?
2	
25	For the synthesis of which compounds can ammonia (NH3) be used?
3 25	How many ATP molecules are needed to synthesize one urea molecule?
4	1111 more and needed to symmetrize one drea more die.
25	How many high-energy bonds are necessary for the synthesis of 100 molecules of urea?
5	T 1:1
25 6	In which processes is ammonia produced?
25	In which processes is ammonia produced?
7	
25	NH3 can be used for the:
8 25	Renal excretion of ammonia - select the correct statement about the process:
9	Renai exerction of annionia select the correct statement about the process.
26	Select ornithine cycle reactions:
0	

```
Select ornithine cycle reactions:
1
26
     Select the correct statements about the chemical reaction:
2
     СООН
                                   COOH
                                  CH-NH_2 + ADP + H_3PO_4
     CH-NH<sub>2</sub> + NH<sub>3</sub> +ATP -
                                   CH<sub>2</sub>
     CH<sub>2</sub>
                                   CH,
     CH<sub>2</sub>
                                   CONH
     СООН
26
     Select the correct statements about the reaction of carbamoyl phosphate synthesis - the
     first reaction of urea synthesis:
     Select the urea cycle enzymes:
26
4
26
     Select the urea cycle enzymes:
5
26
     The connection between Krebs cycle and urea cycle:
6
     Urea cycle (first reaction)- select the correct statements:
26
7
26
     Ureagenesis - choose the correct statements about the process:
8
26
     Ureagenesis - select the correct statements:
9
27
     What are the end products of simple proteins catabolism?
0
     What are the final products of complete NH3 detoxification?
27
1
27
     Select the hereditary diseases caused by defects of the enzymes involved in the
     metabolism of phenylalanine and tyrosine:
     Albinism - select the correct statements about the disease:
27
3
27
     Alcaptonuria - select the correct statements about the disease:
4
27
     Biosynthesis of asparagine (Asn) - choose the correct statements about the reaction:
5
27
     Biosynthesis of glutamine (Gln) - choose the correct statements about the reaction:
6
27
     Choose the correct statements about carbohydrate and lipid metabolisms connections:
7
27
     Choose the correct statements about protein and carbohydrate metabolisms connection:
8
27
     Choose the correct statements about the catabolism of amino acids:
9
     Choose the enzyme involved in amino acids catabolism:
28
0
28
     In the synthesis of what substances does the following compound participate?
     COOH
     CH-NH
     CH,
28
     In the synthesis of what substances does the following compound participate?
```

	CH <sub>2</sub> -NH <sub>2</sub>
	COOH
28	In what processes is the following compound involved?
3	OH
	CH <sub>2</sub>
	CH-NH <sub>2</sub>
	COOH
28	In what processes is the following compound involved?
4	CH-NH <sub>2</sub>
	CH <sub>2</sub>
	СООН
28	In what processes is the following compound involved?
5	CH <sub>2</sub> -NH <sub>2</sub>
	СООН
28	Phenylalanine (Phe) and tyrosine (Tyr) are precursors of:
6	
28	Phenylketonuria - select the correct statements about the disease:
7	
28	Protein and lipid metabolisms connection - choose the correct statements:
8	
28	S-adenosylmethionine (SAM) - choose the correct statements:
9	Colort compet statements shout the following company di
29	Select correct statements about the following compound:
	CH_NH <sub>2</sub>
	ĊH <sub>2</sub>
	ČH <sub>2</sub>
	СООН
29	Select the correct statement about the following compound:
1	N———CH <sub>2</sub> —CH—COOH
	NH NH <sub>2</sub>
29	Select the correct statements about the following compound:
$\frac{2}{2}$	CH <sub>2</sub> -NH <sub>2</sub>
	СООН
29	Select the correct statements about the following compound:
3	СООН
	CH-NH <sub>2</sub>
	CH <sub>2</sub>
	CH <sub>2</sub>
-	СООН
29	Select the correct statements about the following compound:  COOH
4	CH_NH,
	CH <sub>2</sub>
	CH <sub>2</sub>
	СООН
29	Select the enzymes involved in amino acid catabolism:
5	zerer and dang med med an animo work dumo onom.
29	Select the functional groups whose acceptor and donor is the tetrahydrofolic acid:
6	

29 7	Select the statements that characterize protein deficiency:
29	Tetrahydrofolic acid (TFH) - choose the correct statements:
8	Totally distance using (1111) encode the correct statements.
29	Tetrahydrofolic acid (THF) - choose the correct statements:
9	
30	The following compound:
0	OH CH <sub>2</sub>
	CH-NH <sub>2</sub>
	СООН
30	The following compound:
1	СООН
	CH-NH <sub>2</sub>
	CH <sub>2</sub>
20	СООН
30 2	Biosynthesis of deoxyribonucleotides - select the correct statements:
30	Biosynthesis of cytidylic nucleotides:
3	Biosynthesis of cyticytic nucleotides.
30	Biosynthesis of thymidine nucleotides - select the correct statements:
4	
30	Choose the amino acid that is used in the second reaction of pyrimidine nucleotide
5	synthesis:
30 6	Clinical manifestations of gout:
30	Digestion of nucleoproteins - select the correct statements:
7	Digestion of nucleoproteins select the correct statements.
30	GMP synthesis from inosine monophosphate (IMP) - select the correct statements:
8	
30	Inosine monophosphate (IMP) - select the correct statements:
9	
31 0	Phosphoribosyl-pyrophosphate synthesis (PRPP) - select the correct statements about the first reaction of purine nucleotide synthesis:
31	Products of uracil and cytosine catabolism:
1	2. Comment of the com
31	Pyrimidine nucleotide synthesis (select the reactions):
2	
31	Regulation of the purine nucleotides synthesis - choose the correct statements:
3	Colvege of mysing mitugeon are based, colored the against state we sate
31 4	Salvage of purine nitrogenous bases - select the correct statements:
31	Select the chemical compounds necessary for the synthesis of purine nucleotides:
5	zeres and the same
31	Select the chemical compounds that are involved in purine nucleotides synthesis:
6	
31	Select the correct statements about the reaction of carbamoyl phosphate synthesis - the
7	1st reaction of pyrimidine nucleotide synthesis:
31 8	Select the products of thymine catabolism:
0	

31	Select the reactions of pyrimidine nucleotide synthesis:
9	
32	Select the statements that characterize gout:
0	Cymthodia of phosphophogylomina from phosphophogylogylogylogylogylogylogylogylogylogyl
32	Synthesis of phosphoribosylamine from phosphoribosyl pyrophosphate (PRPP) - select
1	the correct statements about the second reaction of purine nucleotide synthesis:
32 2	What amino acid is a donor of the -NH2 group in the pathway of GMP synthesis form IMP?
32	What amino acid is a donor of the -NH2 group in the pathway of AMP synthesis form
3	IMP?
32	What compounds are the sources of atoms for the pyrimidine ring?
4	what compounds are the sources of atoms for the pyrimame ring.
32	What is characteristic for the carbamoyl phosphate synthesis reaction - the 1st reaction of
5	pyrimidine nucleotides synthesis:
32	What is the final product of purine nucleotide catabolism in humans?
6	
32	What statements characterize the synthesis pathway of AMP from inosine
7	monophosphate (IMP):
32	Inhibition of what enzyme underlies the treatment of gout?
8	
32	What of the following is a function of ATP?
9	
33	What of the following is not a property of the genetic code?
0	
33	Select the chemical compound that serves as the source of the methyl group for thymine
1	(synthesis of TMP):
33 2	Select the chemical compound that serves as the source of the amino group for adenine
33	(synthesis of AMP from IMP):  Select the chemical compound that serves as the source of the amino group for guanine
3	(synthesis of GMP from IMP):
33	Select the chemical compound that serves as the source of the amino group for cytosine
4	(synthesis of CTP from UTP):
33	Select the chemical compound that serves as the source of the amino group for carbamoyl
5	phosphate synthesis (synthesis of pyrimidine nucleotides):
33	Select the correct statement about the following chemical reaction Gln + CO2 + 2ATP +
6	H2O → carbamoyl phosphate + Glu + 2ADP + Pi
33	Select the correct statement about the following chemical reaction Gln + CO2 + 2ATP +
7	H2O → carbamoyl phosphate + Glu + 2ADP + Pi
33	Select the inhibitor of dihydrofolate reductase:
8	
33	Select the inhibitor of thymidylate synthase:
9	
34	Select the inhibitor of xanthine oxidase:
0	
34	Bilirubin - select the correct statements regarding its transformations in the liver:
1	Dilimbin adam the compatibility of the second state of the second
34	Bilirubin - select the correct statements regarding the compound:
2	Cotabolism of hamoglobin (Uh) galaat the comment statements recording the process.
34	Catabolism of hemoglobin (Hb) - select the correct statements regarding the process:
ر	

34	Catabolism of hemoglobin is characterized by the following statements:			
4				
34	Catabolism of hemoglobin. What statements are correct regarding biliverdin			
5	transformation into bilirubin?			
34	Causes of hepatic jaundice are the following:			
34	Causes of jaundice are the following:			
7				
34 8	Conjugation of bilirubin - select the statements that characterize the process:			
34 9	Heme biosynthesis - select the compounds required for the process:			
35 0	Heme biosynthesis - select the correct statements about the first reaction of the process:			
35 1	Heme biosynthesis - select the correct statements regarding the second reaction of the process:			
35	Heme biosynthesis - select the correct statements regarding the conversion of protoporphyrin IX into heme:			
35	Hemoglobin (Hb) - which statements characterize its structure?			
3				
35	Hemoglobin (Hb) catabolism - choose the correct statements about the conversion of Hb			
4	to biliverdin:			
35	Hemoproteins - select the correct statements:			
5				
35	Porphyria - select the correct statements about the diseases:			
6				
35 7	Prehepatic jaundice - select the statements that characterize the disorder:			
35 8	Renal excretion of bile pigments - select the correct statements:			
35	Select causes of jaundice:			
9				
36	Select the compound responsible for iron cellular storage:			
36	Select the compound responsible for the blood iron transport:			
1	r · · · · · · · · · · · · · · · · · · ·			
36	Select the compound that are transporting bilirubin in the blood:			
2				
36	Select the compound that is used for the conjugation of bilirubin in the endoplasmic			
3	reticulum of the hepatocytes:			
36	Select the inhibitor of aminolevulinic acid synthase:			
36	Select the membrane protein responsible for the absorption of iron form the small			
5	intestine:			
36	Select the non-proteic part of hemoglobin:			
6				
36 7	What are the stages of bilirubin metabolism in the intestine?			
36	What changes in bile pigments occur in posthepatic jaundice?			
8	garage of the state of the stat			

36 9	What changes of bile pigments occur in hepatic jaundice?		
37 0	What compound, which is usually absent, will appear in the urine in posthepatic jaundice?		
37 1	What is form of iron that is absorbed from the intestine?		
37 2	What is the cause of posthepatic jaundice?		
37 3	What is the main regulatory enzyme of hem synthesis pathway?		
37 4	What processes does hemoglobin participate in?		
37 5	Which of the following statements about blood bilirubin are correct?		
37 6	Which proteins belong to the class of chromoproteins?		
37 7	Which statements about premicrosomal hepatic jaundice are correct?		
37 8	Choose the correct statement about bilirubin:		
37 9	Choose the correct statement about conjugated bilirubin:		
38 0	Choose the correct statement about unconjugated bilirubin:		
38 1	Select the coenzyme that participates in following chemical reaction:  COOH  COOH		
	$ \begin{array}{c} CH_2 \\ CH_2 \end{array} $ + $ \begin{array}{c} COOH \\ CH_2-NH_2 \end{array} $ + $ \begin{array}{c} CH_2 \\ CH_2 \end{array} $ + $ CO_2 $		
	$ \begin{array}{ccc} C=O & C=O \\ SCoA & CH_2 \\ NH_2 \end{array} $		
38 2	Select the correct statement about the following chemical reaction:  COOH  COOH		
_	$CH_2$ $COOH$ $CH_2$ $+$ $CO_2$ $+$ $HSCoA$		
	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		
	SCoA CH <sub>2</sub>		
38	NH <sub>2</sub> Select the correct statement about the following chemical reaction:		
3	zereet me terreet samement acout the rone wing enominent reaction.		

			СООН	СООН
		COOH		COOH CH <sub>2</sub>
	COOH	$\dot{\text{CH}}_2$	COOH CH <sub>2</sub>	
	$CH_2$	$CH_2$	$CH_2$ $CH_2$	$CH_2$ $CH_2$
		~		
	$CH_2 + O$	$=$ C $\longrightarrow$		
	C=O	$CH_2$ -2 $H_2C$	$C_{\infty}$ $CH_2$	C. CH
	$CH_2$	$\stackrel{ }{\mathrm{NH}_2}$	N CITY	NH
		1112	$CH_2$	$CH_2$
	$NH_2$		<u> </u>	NH <sub>2</sub>
			NH <sub>2</sub>	1112
38	Select the possi	ible cause of posth	epatic jaundice:	
38	Select the possi	ible cause of prehe	natic iaundica:	
5	Select the possi	iole cause of prefic	patic jaunuice.	
38	Which of the fo	ollowing statement	s about hormones is correc	t?
6				
38		mone whose secre	tion is not regulated by the	hypothalamic-pituitary
7	mechanism:	1		1 (1 1 : : : : : :
38 8	Choose the hormone whose secretion is not regulated by the hypothalamic-pituitary			hypothalamic-pituitary
38	mechanism:	mona whosa sacra	tion is not regulated by the	hypothalamic pituitary
9	Choose the hormone whose secretion is not regulated by the hypothalamic-pituitary mechanism:			nypotnaranne-pituitary
39		mbrane phospholir	oid that is a precursor of sec	cond messenger hormones:
0		r		
39	Cytosolic-nucle	ear mechanism of a	action of hormones - select	the correct statement:
1				
39 2	Membrane-intr	acellular mechanis	sm of hormone action - sele	ect the correct statement:
39	Membrane-intr	acellular mechanis	sm of hormone action - sele	ect the correct statements:
3		deentalar meenams	in or normone action—ser	set the correct statements.
39	Membrane-intr	acellular mechanis	sm of hormones action me	ediated by cAMP - select the
4	statements that			-
39	Phosphodiester	ase - select the cor	rect statements regarding t	he enzyme:
5	G 1 + 1	1		
39	Select hormone	e second messenge	rs:	
6 39	Select the class	es of hormones ac-	cording to the structural cla	assification:
7	Scient the class	es of normones ac	coroniz to the structural cla	ADDITICULIOII.
39	Select the corre	ect statement regard	ding Gs proteins:	
8				
39	Select the corre	ect statements abou	at the active form of Gs pro	otein:
9	C-14 /1		4.41	
40 0			it the membrane-intracellul l (DAG) and inositol tripho	lar mechanism of hormone
40			rding adenylate cyclase:	ospiiates (II 3).
1		or succincino rega	raning addingtate eyetase.	
J				
40	Select the corre	ect statements rega	rding calmodulin:	

40	Select the correct statements regarding protein kinase A:
40 4	Select the correct statements regarding the hormones:
40 5	Select the hormone that acts through the cAMP-mediated membrane-intracellular mechanism:
40	Select the hormone that acts through the cAMP-mediated membrane-intracellular mechanism:
40 7	Select the hormone that has membrane-intracellular mechanism of action:
40	Select the ion that is a second messenger of hormones:
8 40 9	Select the precursor of the second messenger of hormones:
41 0	Select the reaction catalyzed by phosphoprotein phosphatases:
41	Select the second messenger of glucagon:
41 2	What are the properties of phospholipase C?
41 3	What is cyclic AMP (cAMP)?
41 4	Which classes of conjugated proteins do hormone receptors belong to?
41 5	Which compound is inhibited by caffeine?
41 6	Which hormone has cytosolic-nuclear mechanism of action?
41 7	Which hormone has cytosolic-nuclear mechanism of action?
41 8	Which hormone has cytosolic-nuclear mechanism of action?
41 9	Which of the following compound is biologic activ?
42 0	Which processes are regulated by Ca2+-calmodulin complex?
42	Select the correct statements about the chemical structure:  O-H <sub>2</sub> C  O-H <sub>2</sub> C  OH
42 2	What statement is characterizing glucagon?
42	Adrenergic receptors - select the correct statements:
42 4	Biosynthesis of iodothyronines - select the correct statements:
_ ' _	

42	By which mechanism of action on the kidneys does parathyroid hormone cause an increase
5	in blood calcium level?
42	Calcitonin - select the correct statements regarding the hormone:
42	Catecholamine biosynthesis - select the correct statements:
7	Catecholanime biosynthesis select the correct statements.
42	Choose the compound that regulates the secretion of parathyroid hormone:
8	The state of the s
42	Diabetes mellitus - select the disorders that are specific for the disease:
9	_
43	Glucagon secretion - select the correct statements about its regulation:
0	
43	How insulin is influencing the activity of enzymes?
1	
43	Pheochromocytoma - select the correct statements about the disease:
2	
43	Prolactin - select the correct statements about the hormone:
3	Danel makes mation of which compound is induced by outidivectic hormone?
43	Renal reabsorption of which compound is induced by antidiuretic hormone?
43	Select hormone that is synthesized in the adrenal cortex:
5	Select normone that is synthesized in the adrenal cortex.
43	Select hormones belonging to the class of glycoprotein hormones of the
6	adenohypophysis:
43	Select the adenohypophysis hormones:
7	
43	Select the compounds involved in the maintenance of the extracellular calcium
8	homeostasis:
43	Select the correct statement about iodothyronines:
9	
44	Select the correct statements about oxytocin:
0	
44	Select the correct statements about steroid hormones:
1	Salast the correct statements shout the biosynthesis of the penerostic hormones.
44 2	Select the correct statements about the biosynthesis of the pancreatic hormones:
44	Select the correct statements about the regulation of synthesis and secretion of
3	glucocorticoids:
44	Select the correct statements regarding the biologic effects of the parathyroid hormone:
4	The second of the particular control of the particular formula of the
44	Select the correct statements regarding the hormones of adenohypophysis:
5	
44	Select the correct statements regarding the hormones that belong to the class of
6	catecholamines:
44	Select the correct statements regarding the luteinizing hormone (LH):
7	
44	Select the correct statments regarding adrenocorticotropin (ACTH):
8	
44	Select the disorders specific for hyperparathyroidism:
9	

45 0	Select the disorders specific for hypoparathyroidism:
45	Select the hormone that stimulates glycogen synthesis:
45	Select the hormone that stimulates glycogenolysis:
45	Select the hormone whose deficiency causes diabetes insipidus:
3 45	Select the hormones that are derivatives of proopiomelanocortin:
4 45	Select the hormones that belong to the class of adenohypophisis somatomammotrop
5	hormones:
45 6	Select the metabolic and physiologic effects of catecholamines:
45 7	Select the metabolic effects of glucagon:
45 8	Select the metabolic effects of insulin:
45 9	Select the metabolic effects of T3 and T4:
46	Select the second messenger of adrenalin:
46	Select the statements that characterize glucagon:
46	Select the tropin-release inhibiting hormone (statin):
46	Select the tropin-releasing hormones (liberins):
3 46	Somatostatin - select the correct statements about the hormone:
4	
46	Somatotropin (growth hormone) - select the correct statement regarding the compound:
46 6	The synthesis of the active form of what vitamin is stimulated by parathyroid hormone?
46 7	Thyroglobulin - select the correct statements about the compound:
46	Thyrotropin (TSH) - select the correct statements regarding the compound:
46	Vasopressin - select the correct statements about the hormone:
9 47	What are the correct statements about hypothalamic hormones?
0	
47 1	What are the metabolic effects of somatotropin?
47 2	What are the metabolic effects of T3 and T4?
47	What are the signs of hypothyroidism in adults (myxedema)?
47	What compounds stimulate insulin secretion?
4	

47 5	What processes are stimulated by insulin?
47	What statements are characterizing insulin?
47	What statements characterize 1,25-dihydroxycholecalciferol - calcitriol?
47 8	What statements characterize the mechanism of action of insulin?
47 9	Which are the metabolic effects of glucocorticoids?
48 0	Which are the signs of thyroid hyperfunction?
48 1	Which compounds are transporting iodothyronines in the blood?
48 2	Which factors influence the synthesis and secretion of iodothyronines?
48	Which is the metabolic effect of calcitonin?
48 4	Which of the following effects does insulin have on lipid metabolism?
48 5	Which of the following effects does insulin have on protein metabolism?
48 6	Which statements are correct regarding the parathyroid hormone?
48 7	Which statements are true regarding the hormones of posterior pytuitary gland?
48 8	Which statements characterize the follicle stimulating hormone (FSH)?
48 9	Angiotensin II - select the correct statements:
49 0	Hyperaldosteronism (Conn's syndrome) is characterized by:
49 1	Hypercortisolism (Addison's disease) - choose the correct statements about the specific signs of the disease:
49 2	Select physiological effects of the following hormone:  OH
	но
49	Select physiological effects of the following hormone:  OH
	o ~
49	Select the compound whose concentration increase will trigger aldosterone secretion:

	~
49 5	Select the correct statements about the Cushing's syndrome:
49	Select the correct statements about the effects of the following hormone:
6	СH <sub>2</sub> —ОН
	Ċ=O
	HO OH
40	
49 7	Select the correct statements about the functions of the following hormone:CHOH
'	$O_{\sim C} \stackrel{\mathbf{H}}{\subset} C = O$
	HO. C
	, Y Y )
49	Select the correct statements about the mechanism of action of the following hormone:
8	CH <sub>2</sub> —OH
	Ċ=O
	но
40	
49 9	Select the correct statements about the regulation of the synthesis and secretion of sex hormones:
50	Select the correct statements regarding aldosterone synthesis and secretion:
0	g
50	Select the correct statements regarding the androgens:
1	
50 2	Select the correct statements regarding the following hormone: CH_OH
	но
	,
	o de la companya de l
50	Select the correct statements regarding the metabolic effects of the following hormone:
3	СН <sub>2</sub> —ОН
	Ċ=O
	но
50	Select the correct statements regarding the sex hormones:
4	select the correct statements regarding the sex normones.
50	Select the hormone that regulates blood osmolarity:
5	
50	Select the metabolic effects of the following hormone:
6	
5 50	

	OH
50	Select the sex hormones from the following:
7	
50	What is the purpose of using corticosteroids as medicines?
8	
50 9	What processes are stimulated in the kidneys by the following hormone?  CH2—OH  OCC HO  HO  OCC HO  OC
51	Which of the listed hormones stimulates protein synthesis in scheletal muscles?
0	
51	Which statements are correct regarding the female sex hormones?
1	