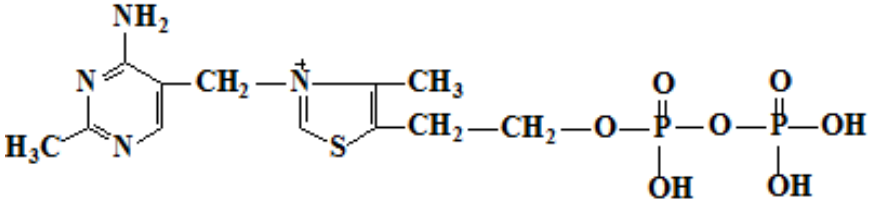
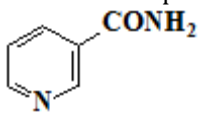
Biochemistry exam subjects
for the students of the Faculty Medicine nr. 2
(summer session, 2018 - 2019)

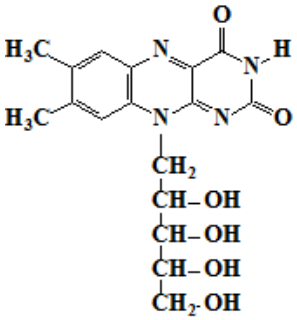
1. Select the correct statements regardeing the active center (AC) of an enzyme.
2. What is the deffinition of the active center of the enzyme.
3. Allosteric center - select the correct statement:
4. Differences of enzymes from inorganic catalysts are:
5. Which statements are correct regarding the enzymes?
6. Hydrolyses - select the correct statement:
7. International Unite of enzyme activity is the amount of:
8. Which statements are correct regarding isoenzymes?
9. Which statements are correct regarding isomerases?
10. What is the deffinition of Katal?
11. Which statements are correct regarding Ligases?
12. Which statements are correct regarding Lyases?
13. Which statements are correct regarding NAD+?
14. Which statements are correct regarding NADP+?
15. Oxido-reductases - properties:
16. Select correct statements regarding the cofactors:
17. Select the chemical process in which is involved vitamin C:
18. Select the correct statement about allosteric enzymes:
19. Select the correct statement about the chemical nature of enzymes:
20. Select the correct statements about coenzymes - derivatives of vitamin B2:
21. Select the correct statements about coenzymes FAD and FMN:
22. Select the correct statements about conjugated enzymes:
23. Select the correct statements about LDH isoenzymes:
24. Select the correct statements about succinate dehydrogenase (SDH) and its activity regulation:
25. Select the correct statements about the chemical compound:



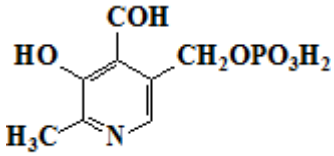
26. Select the correct statements about the chemical compound:



27. Select the correct statements about the chemical compound:

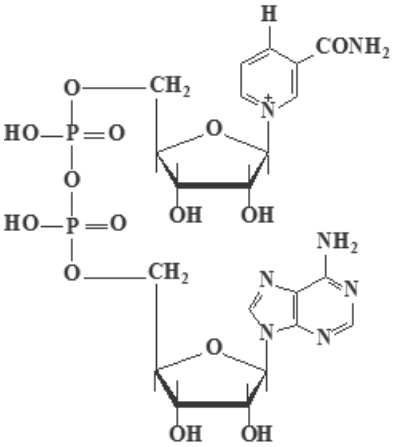


28. Select the correct statements about the chemical structure:



29. Select the correct statements about the cofactors:

30. Select the correct statements about the chemical compound:



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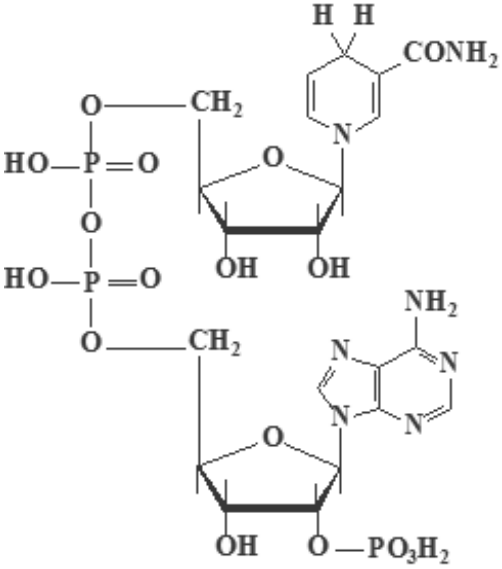
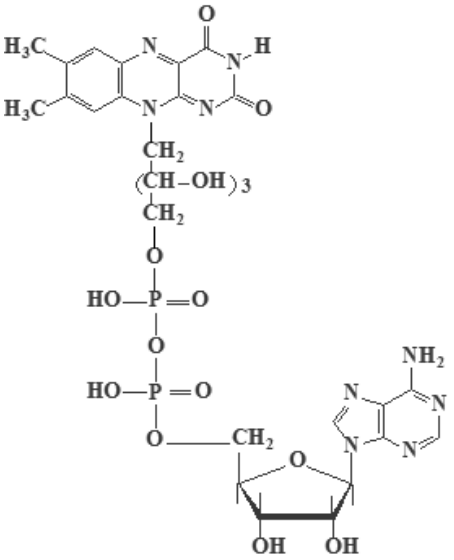


32. Select the correct statements about the chemical compound:



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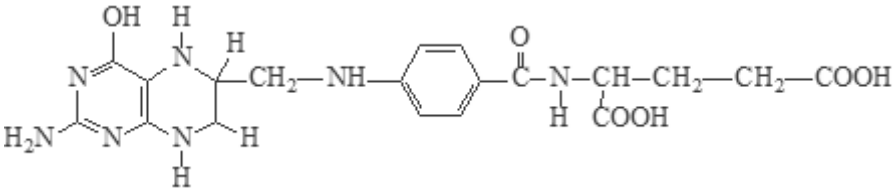
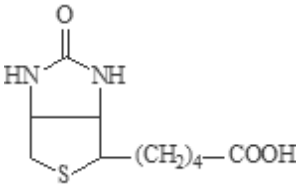


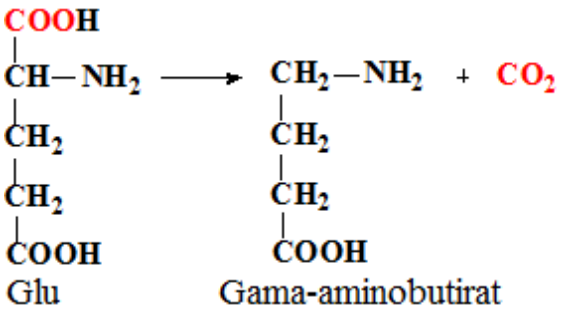
34. Select the correct statements about the chemical compound:



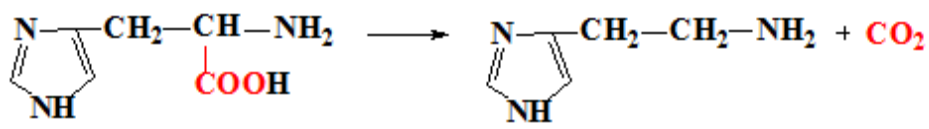
35. Select the correct statements about the enzyme classification:

36. Select the correct statements about the enzyme mechanism of action:

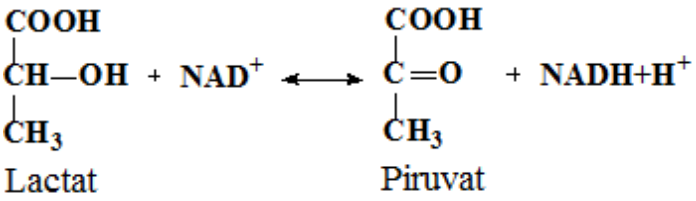
37. Select the correct statements about the enzyme that catalyzes the chemical reaction:



38. Select the correct statements about the enzyme that catalyzes the chemical reaction:

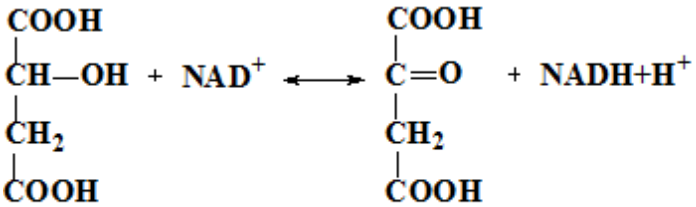


39. Select the correct statements about the enzyme that catalyzes the chemical reaction:



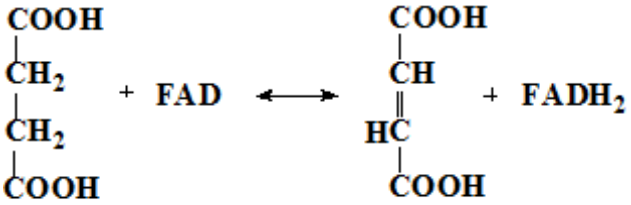
Lactat Piruvat

40. Select the correct statements about the enzyme that catalyzes the chemical reaction:



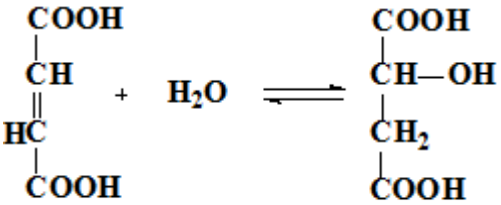
Malat Oxaloacetat

41. Select the correct statements about the enzyme that catalyzes the chemical reaction:



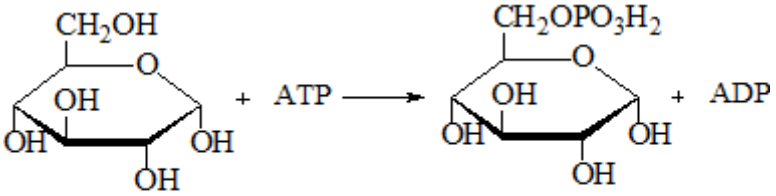
Succinat Fumarat

42. Select the correct statements about the enzyme that catalyzes the chemical reaction:



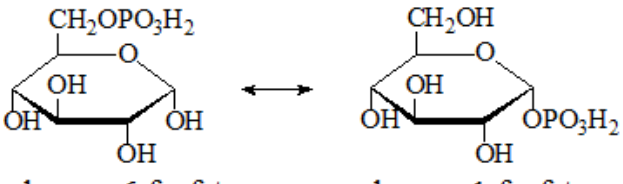
Fumarat Malat

43. Select the correct statements about the enzyme that catalyzes the chemical reaction:



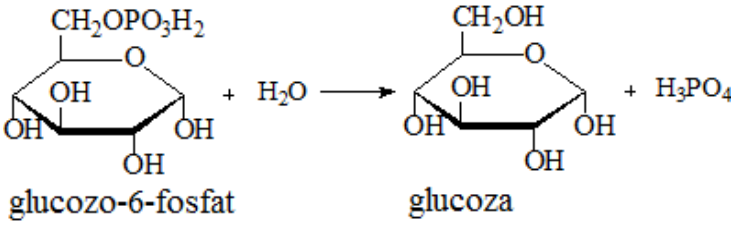
glucoza glucozo-6-fosfat

44. Select the correct statements about the enzyme that catalyzes the chemical reaction



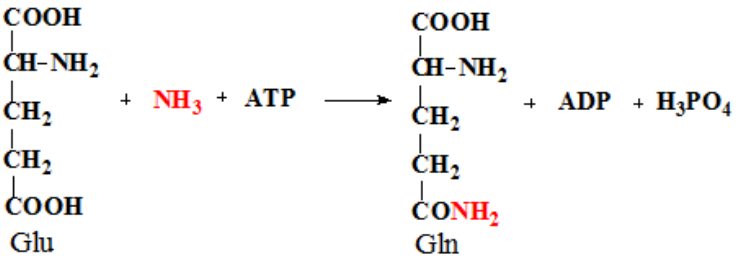
glucozo-6-fosfat glucozo-1-fosfat

45. Select the correct statements about the enzyme that catalyzes the chemical reaction:



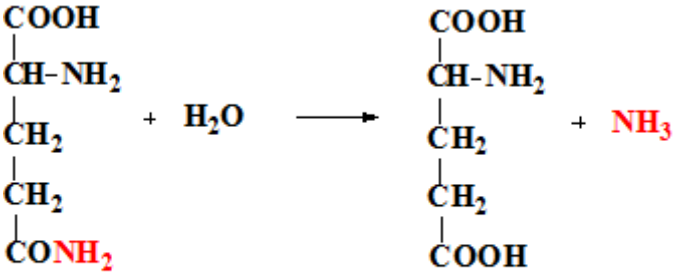
glucozo-6-fosfat glucoza

46. Select the correct statements about the enzyme that catalyzes the chemical reaction:



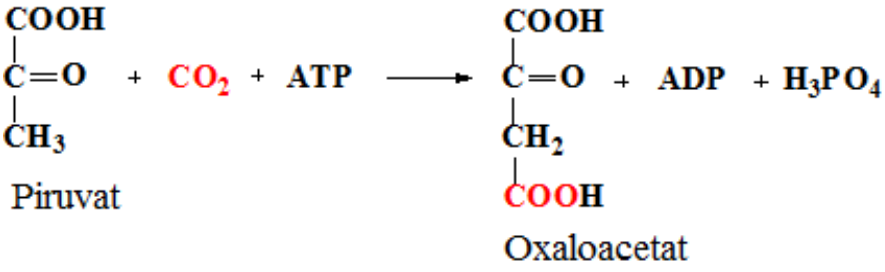
Glu Gln

47. Select the correct statements about the enzyme that catalyzes the chemical reaction:



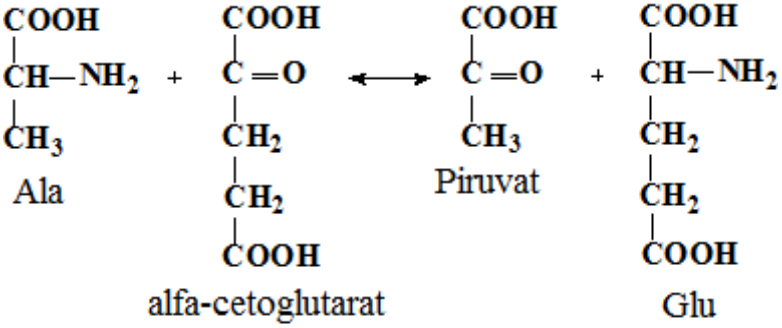
Gln Glu

48. Select the correct statements about the enzyme that catalyzes the chemical reaction:



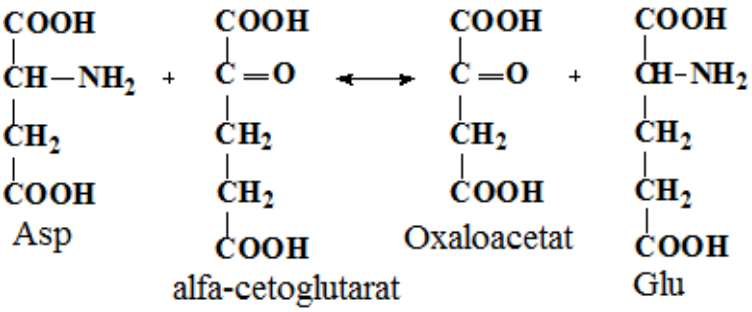
Piruvat Oxaloacetat

49. Select the correct statements about the enzyme that catalyzes the chemical reaction:

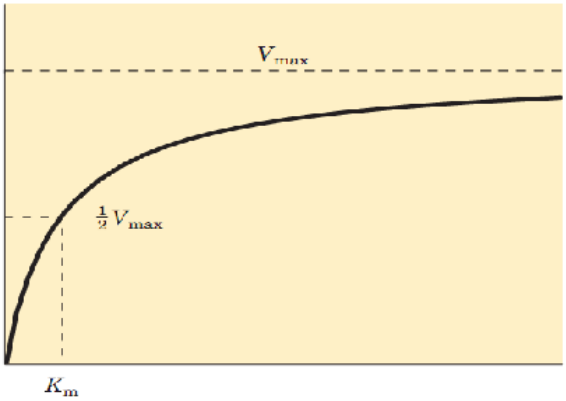


Ala alfa-cetoglutarat Piruvat Glu

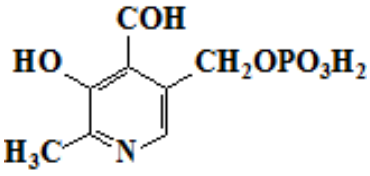
50. Select the correct statements about the enzyme that catalyzes the chemical reaction:



51. Select the correct statements about the substrate:
52. Which are the common features of enzymes and nonenzymatic catalysts?
53. Which functional groups can be located in the active center of enzymes?
54. Which properties are common for all enzymes?
55. Select the deffinition if the specific activity of the enzyme.
56. The specificity of enzymes - select the correct statement:
57. Transferases - select the correct statement:
58. What enzyme has stereochemical specificity?
59. Mechanisms of enzyme activation are:
60. Non-competitive inhibition feature is:
61. Select the correct statement about pepsin and the mechanism of its activity regulation:
62. Select the correct statement about the allosteric inhibition:
63. Select the correct statements about competitive inhibition:
64. Select the correct statements about the presented image:



65. The activation of the enzymes is possible by:
66. The characteristics of competitive inhibition (CI):
67. The influence of pH on the enzyme activity:
68. The specific inhibition of enzymes is possible by:
69. Thermolability of enzymes - select the correct statements:
70. Select chemical processes that involves chemical compound:



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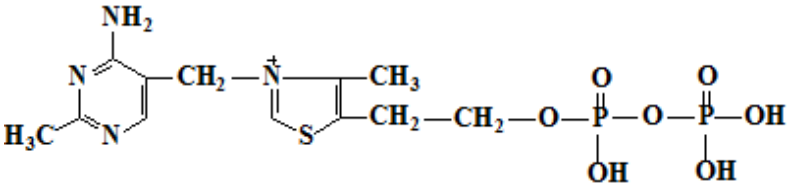

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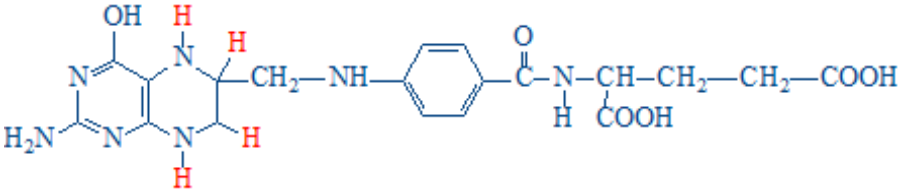
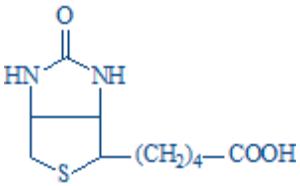
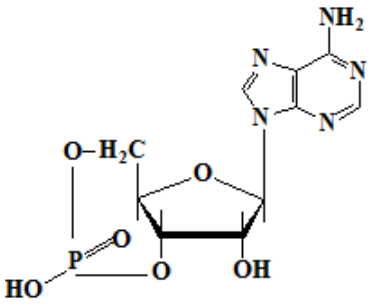


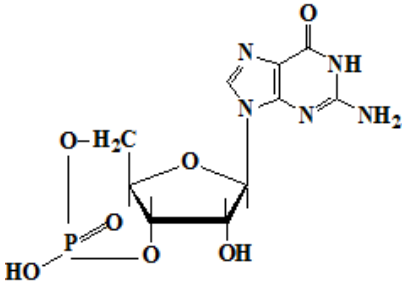
73. Select the chemical process that involves chemical compound:



74. Select the chemical process that involves coenzyme A:
75. Select the chemical process that involves vitamin C:
76. Histones - select the correct statements:
77. Select the correct statements about the chemical structure:

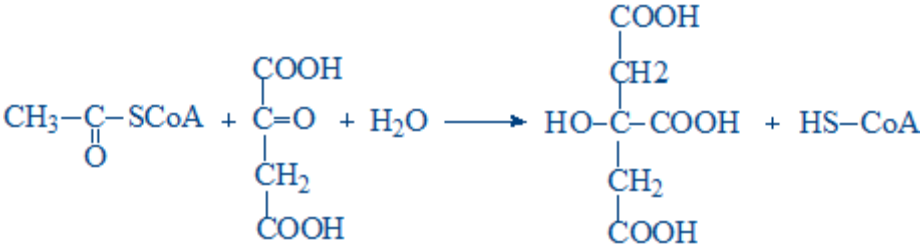


78. Select the correct statements about the chemical structure:

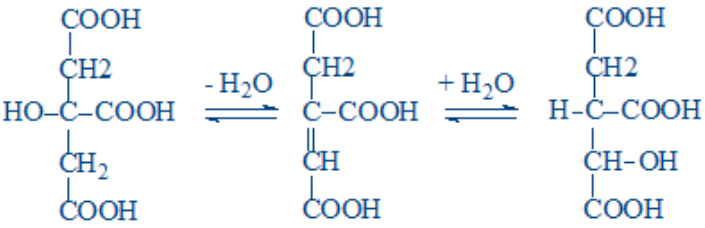


79. Which are the common features of the DNA and RNA biosynthesis?
80. Choose the correct statement about RNA biosynthesis - transcription:
81. DNA biosynthesis requires:
82. DNA replication - select the correct statements:
83. DNA-polymerases I:
84. DNA-polymerases III select the correct statements:

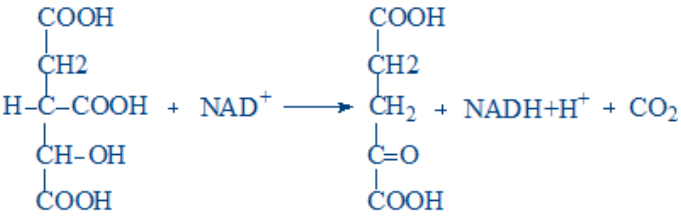
85. Okazaki fragments - select the correct statements:
86. Which are the posttranscriptional modifications of mRNA and tRNA?
87. RNA polymerases select the correct statements:
88. RNA-dependent DNA polymerase - select the correct statements:
89. Select the correct statements about replication:
90. Select the enzymes of the DNA-replicase complex:
91. DNA repair requires the following enzymes:
92. Activation of amino acids - select the correct statement:
93. Choose the correct statements about aminoacyl-tRNA-synthetases:
94. Choose the correct statements about the genetic code:
95. Deletion mutations - select the correct statements:
96. Elongation stage of the protein biosynthesis requires:
97. Elongation step of translation is characterized by:
98. Enzyme repression - select the correct statement:
99. Initiation complex in protein synthesis consists of:
100. Initiation of protein synthesis requires:
101. Molecular mutations can be produced by:
102. Select the correct statements about the protein biosynthesis regulation based on lac-operon example (enzyme induction):
103. Telomerase - select the correct statements:
104. The structure and function of ribosomes - select the correct statements:
105. Transversion mutations - select the correct statements:
106. Which of the following compounds can regulate gene expression in humans?
107. Which of the following processes are posttranslational modifications of proteins?
108. Which of the following processes are specific for the termination stage of protein biosynthesis?
109. Choose the substrate phosphorylation reaction from the Krebs cycle:
110. Metabolism regulation - select the correct statements:
111. Which of the listed substances are high-energy compounds?
112. Alpha-ketoglutarate dehydrogenase complex - select the correct statements:
113. Anabolism - what statement characterizes it?
114. Anaplerotic reactions - choose the correct statement:
115. Select the correct reactions of ATP hydrolysis.
116. Bioenergetics. What statements characterize it?
117. Biological oxidation:
118. Catabolic and anabolic pathways - choose the correct statements:
119. Catabolism - which statement is characterizing it?
120. Choose the anaplerotic reactions:
121. Choose the coenzyme of the pyruvate dehydrogenase complex:
122. Choose the coenzyme that is necessary for normal functioning of the Krebs cycle enzymes:
123. Choose the correct statements about the metabolic pathways:
124. Choose the correct statements regarding the reaction:



125. Choose the correct statements regarding the reaction:



126. Choose the correct statements regarding the reaction:



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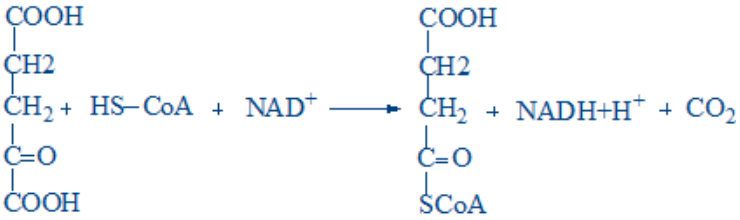

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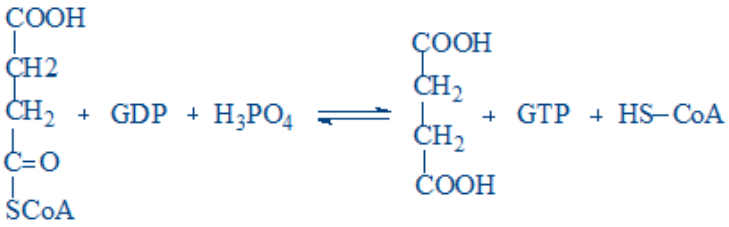

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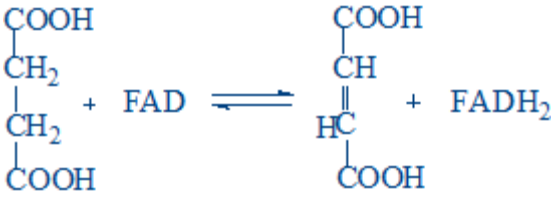

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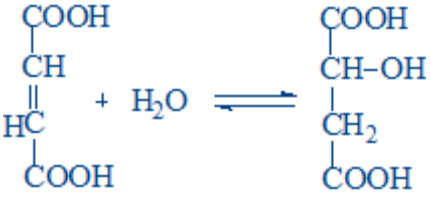

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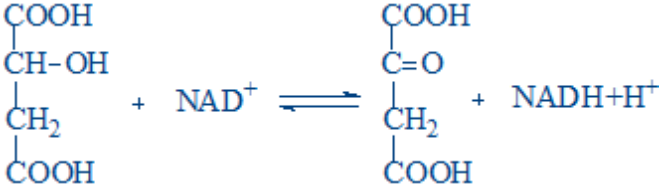

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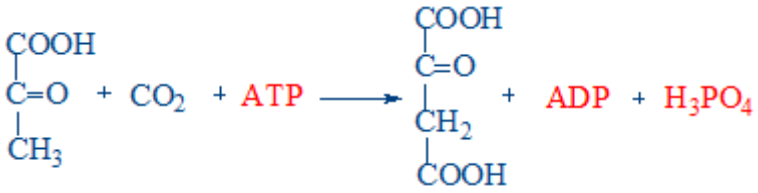
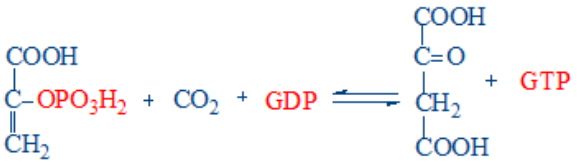
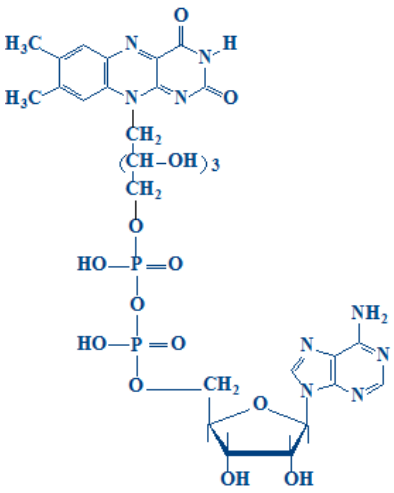


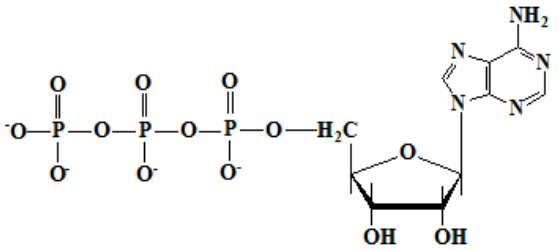
133. Choose the correct statements regarding the reaction:



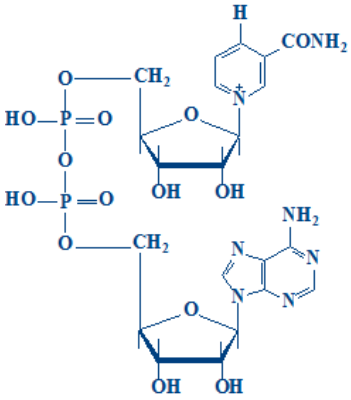
134. Choose the FAD-dependent dehydrogenases (DH):
135. Choose the metabolism functions:
136. Choose the NAD+-dependent dehydrogenases (DH):
137. Choose the regulatory enzymes of the Krebs cycle:
138. Choose the substrate phosphorylation reaction from the Krebs cycle:
139. Choose the vitamin that is a structural element of a coenzyme from the pyruvate dehydrogenase complex:
140. Choose the vitamin that is necessary for normal activity of Krebs cycle enzymes:
141. Choose the vitamins that are components of the coenzymes from the pyruvate dehydrogenase complex:
142. Choose the vitamins that are necessary for normal activity of Krebs cycle enzymes:
143. Citrate synthase - select the correct statements:
144. During the hydrolysis of the following compound is released more energy than during the hydrolysis of one high-energy bond of ATP:
145. Energetic state of the cell - select the correct statements:
146. Energy produced during ATP hydrolysis is determined by:
147. Free energy (ΔG) - select the correct statements:
148. Krebs cycle - which statement characterizes the process?
149. Metabolism - which statements are characterizing it?
150. Polyenzymatic complex pyruvate dehydrogenase (PDH) - choose the correct statements:
151. Regulation of the PDH complex activity - select the correct statements:
152. Select the correct statement about the chemical compound:



153. Select the correct statements about the chemical compound:

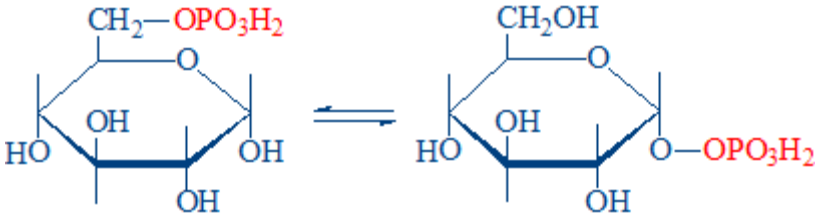


154. Select the correct statements about the chemical compound:



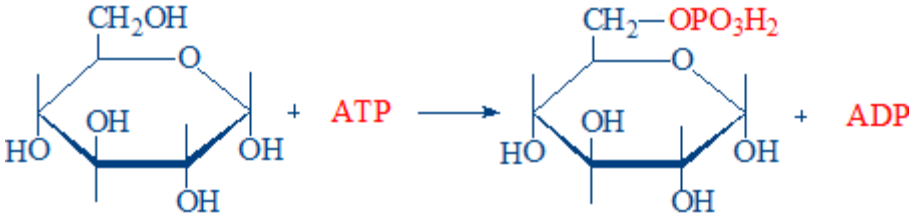
155. Succinate dehydrogenase:
156. Select the reaction of oxidative decarboxylation of pyruvate.
157. The role of the pyruvate dehydrogenase complex (PDHc):
158. The speed of the metabolic processes:
159. Which of the listed compounds IS NOT a high energy one:
160. ATP synthase - select the correct statements:
161. Brown adipose tissue:
162. Consumption of the free energy (ΔG) of the electron transporting chain:
163. Cytochromes - select the correct statement:
164. Glycerol-phosphate shuttle system - choose the correct statements:
165. Inhibition of the electron transporting chain (ETC):
166. Oxidative phosphorylation - select the correct statements:
167. Oxido-reduction potential (Eo) of the redox systems of the electron transporting chain (ETC):
168. Phosphorylation ratio (P/O) - select the correct statements:
169. Select the ATP synthase inhibitor:
170. Select the correct statements about the electron transporting chain (ETC):
171. Select the correct statement about the electron transporting chain complex II (succinate-CoQ reductase):
172. Select the correct statements about the electron transporting chain complex I (NADH-CoQ reductase):
173. Select the correct statements about the electron transporting chain complex III (CoQH2-cytochrome c reductase):
174. Select the correct statements about the electron transporting chain complex IV (cytochrome oxidase):
175. Select the process that occurs in the inner mitochondrial membrane:
176. Select the processes that occur in the mitochondrial matrix:
177. Select the uncoupler of the oxidative phosphorilation:
178. Which are the end products of the electron transporting chain?
179. The mechanism of oxidative phosphorylation - select the correct statements:
180. The transfer of reducing equivalents through the electron transport chain (ETC) is characterized by the following statements:

181. Uncouplers of the oxidative phosphorilation - select the correct statement:
182. Cytochrome P450:
183. Microsomal oxidation - choose the correct statements:
184. Choose the functions of carbohydrates:
185. Digestion of carbohydrates - select the enzymes that are involved and their properties:
186. Glucose absorption from the small intestine:
187. Glycogen - select the correct statements:
188. Lactose intolerance - select the correct statements:
189. 1,6-glycosidic bond formation in glycogen (glycogenogenesis):
190. Breaking down of 1,6-glycosidic bonds of glycogen (glycogenolysis):
191. Choose the enzymes of glycogenogenesis:
192. Choose the enzymes of glycogenolysis:
193. Glucose-6-phosphate obtained from glycogen in skeletal muscles can be:
194. Glucose-6-phosphate obtained from glycogen in the liver can be:
195. Glycogen phosphorylase - select the correct statements:
196. Glycogen synthase - select the correct statements:
197. Glycogenogenesis - choose the correct statements:
198. Glycogenogenesis - select the reactions of the process:
199. Glycogenolysis - select the correct statements:
200. Glycogenolysis - which reaction is catalyzed by glycogen phosphorylase?
201. Glycogenosis: glycogen storage disease - select the correct statment:
202. Hormonal regulation of glycogenogenesis - choose the correct statements:
203. Hormonal regulation of glycogenolysis - choose the correct statements:
204. The chemical reaction is characterized by the following statements:

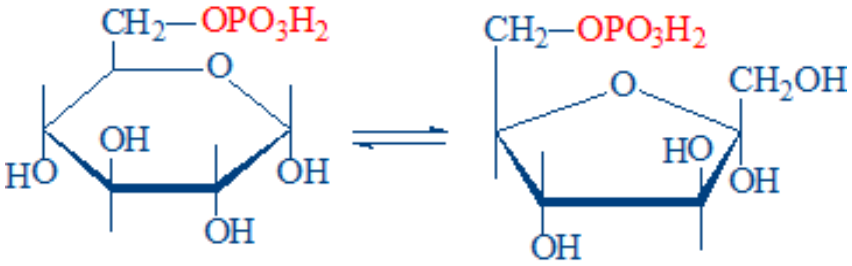


205. The transport of reducing equivalents through the inner mitochondrial membrane (shuttle systems):
206. Glycolysis - select the correct statement:
207. Choose the compounds that serve as substrates for gluconeogenesis:
208. Choose the reactions of substrate level phosphorylation:
209. Choose the regulatory enzymes of glycolysis:
210. Common enzymes of glycolysis and gluconeogenesis are the following:
211. For the synthesis of one molecule of glucose are required:
212. Glucokinase - choose the correct statments:
213. Gluconeogenesis - select the correct statements:
214. Gluconeogenesis from alanine - which enzymes are required?
215. Gluconeogenesis from glycerol - which enzymes are required?
216. Gluconeogenesis from lactate requires the presence of the following enzymes:
217. Glucose-6-phosphatase - select the correct statements:
218. Glycolysis - select the correct statements:
219. Glycolysis is activated by:
220. Glycolysis is inhibited by:
221. Hexokinase - select the correct statements:
222. Hormonal regulation of gluconeogenesis:

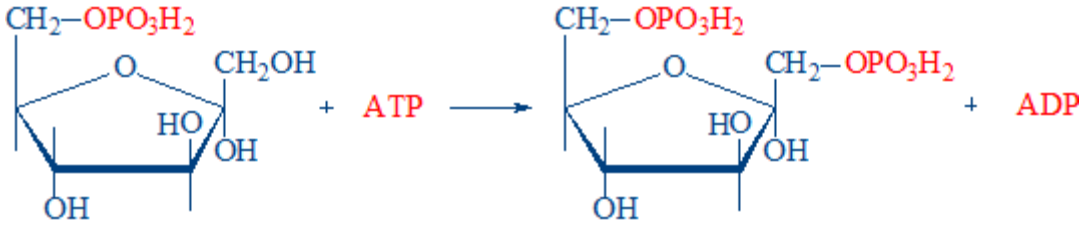
223. Hormonal regulation of glycolysis - select the correct statement regarding hormone influence:
224. How many ATP molecules are produced from complete oxidation of lactate?
225. How many ATP molecules are produced from complete oxidation of pyruvate?
226. Malate-aspartate shuttle system – which of the following reactions occurs in the cytosol?
227. Malate-aspartate shuttle system – which of the following reactions occurs in the mitochondria?
228. Pathways of pyruvate usage in human cells are:
229. Pyruvate carboxylase - select the correct statements:
230. Regulation of phosphofructokinase activity:
231. Select the correct statement about the following reaction:



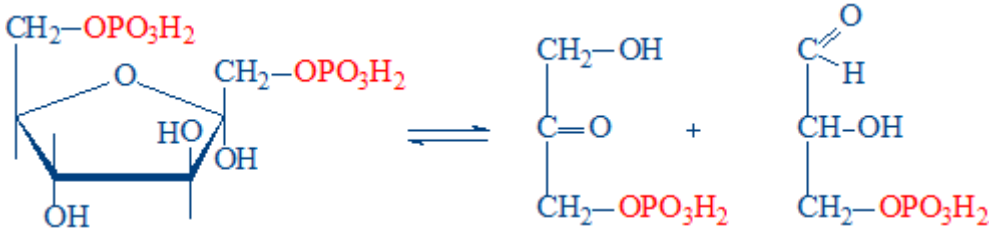
232. Select the correct statement about the following reaction:



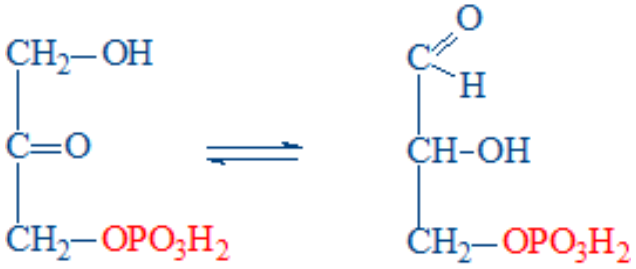
233. Select the correct statement about the following reaction:



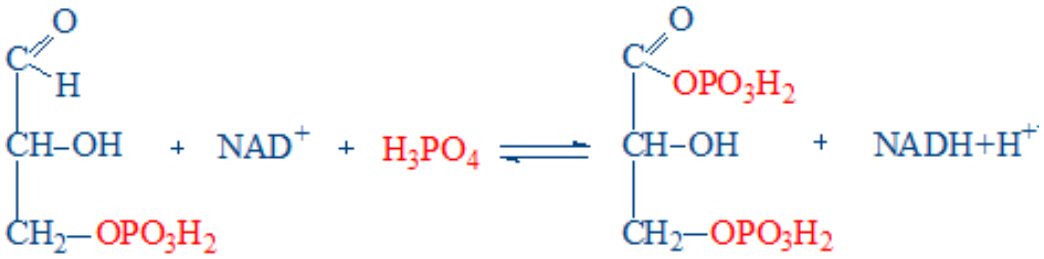
234. Select the correct statements about the following reaction:



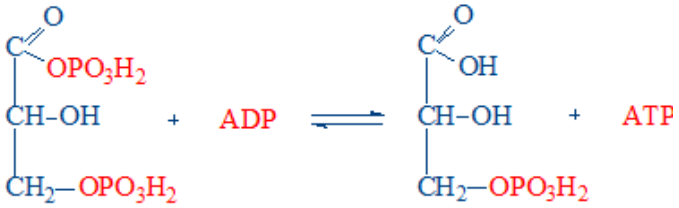
235. Select the correct statements about the following reaction:



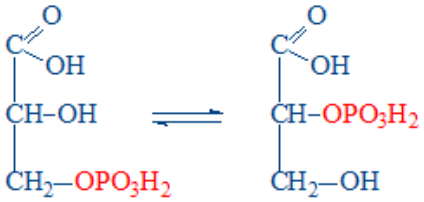
236. Select the correct statements about the following reaction:



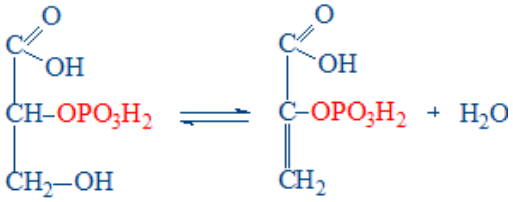
237. Select the correct statements about the following reaction:



238. Select the correct statements about the following reaction:

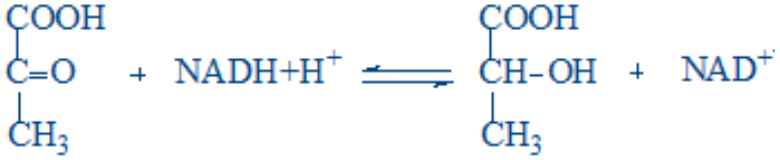


239. Select the correct statements about the following reaction:

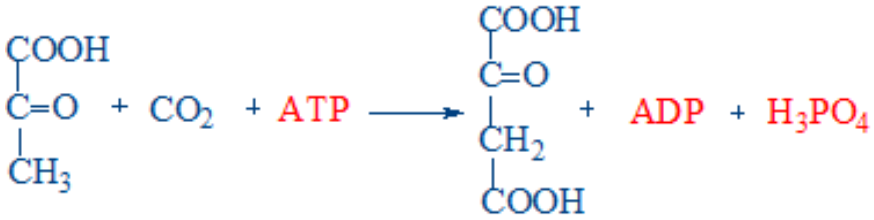


240. Select the correct statements about the following reaction:

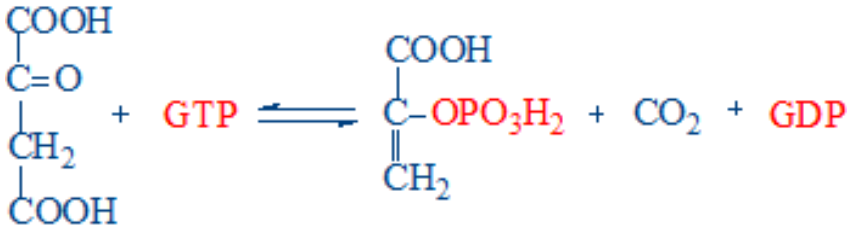
241. Select the correct statements about the following reaction:



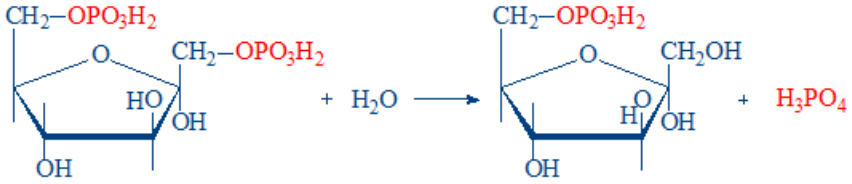
242. Select the correct statements about the following reaction:



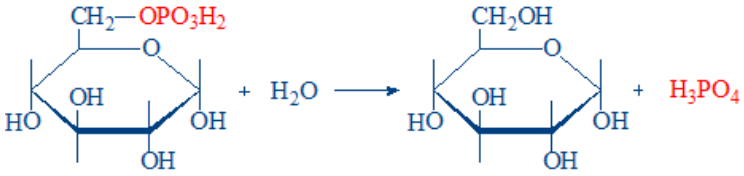
243. Select the correct statements about the following reaction:



244. Select the correct statements about the following reaction:

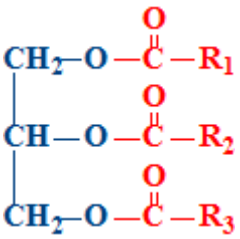


245. Select the correct statements about the following reaction:

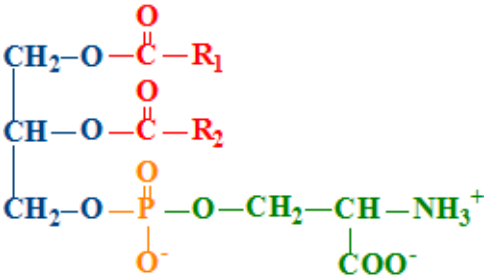


246. The end products of anaerobic glycolysis are:
247. The end products of complete (aerobic) oxidation of glucose are:
248. The overall reaction of anaerobic glycolysis is:
249. What glycolysis enzymes catalyze the reactions in which ATP is synthesized?
250. Which enzymes do not participate in aerobic oxidation of glucose?
251. Insulin causes the following effects:
252. Choose the reactions of the oxidative stage of pentose-phosphate pathway:
253. Diseases accompanied by hyperglyceamia are:
254. Effect of insulin on lipid metabolism:
255. Effects of insulin on carbohydrate metabolism in the liver:
256. Enzymes necessary for galactose metabolism are:
257. Enzymes required for fructose metabolism in the liver are:
258. Essential fructosuria - select the correct statments:
259. Fructose metabolism in skeletal muscles - select the reactions of the process:
260. Fructose metabolism in the liver - select the reactions of the process:
261. Functions of pentose-phosphate pathway are:
262. Galactosemia - select the correct statements:
263. Hereditary fructose intolerance - select the correct statements:
264. Hereditary galactose intolerance or galactosemia type I:
265. Hormonal regulation of glycemia:
266. Hyperglycemia may be determined by:
267. Hypoglycemia can be determined by:
268. Initial compounds for pentose-phosphate pathway are:
269. Insulin determines the following effects:
270. Metabolism of galactose - select the specific reactions:
271. Pentose-phosphate pathway of glucose oxidation - select the correct statements:
272. Reaction: Glucose-6-phosphate + NADP+ → 6-phosphogluconolactone + NADPH+H+:
273. Reaction: Pyruvate + NADH+H+ ↔ lactate + NAD+
274. Synthesis of insulin - select the correct statments:

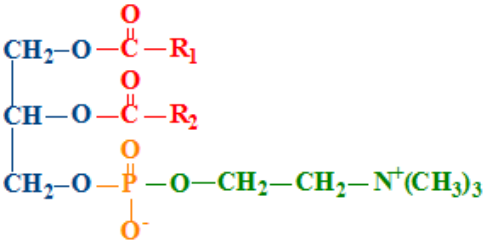
275. The end products of the oxidative phase of pentose-phosphate pathway are:
276. 2,3-bisphosphoglycerate shunt - select the reactions of the pathway:
277. Bile acids - select the correct statements:
278. Chylomicrons - select the correct statements:
279. Complete digestion of the triglycerides in the gastrointestinal tract requires:
280. Dietary fat digestion in adults:
281. Functions of lipids are:
282. HDL - select the correct statement:
283. Hydrolysis of dietary lipids leads to formation of:
284. In human cells and tissues the following fatty acids prevail:
285. LDL - select the correct statements:
286. Lipid components of the cell membranes are:
287. Why lipids are essential components of the diet?
288. Lipolytic enzyme action in the gastrointestinal tract:
289. Choose the correct answers regarding the compound:



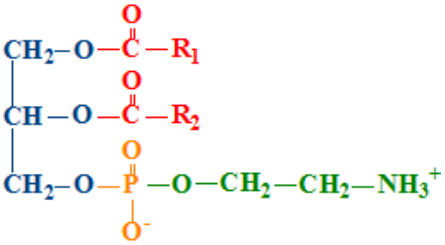
290. Choose the correct answers regarding the compound:



291. Choose the correct answers regarding the compound:

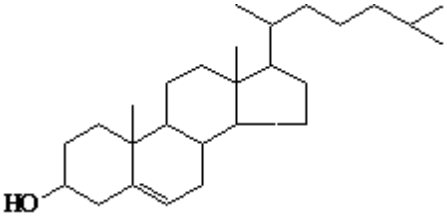


292. Choose the correct answers regarding the compound:



293. Select the correct statement about micelles:

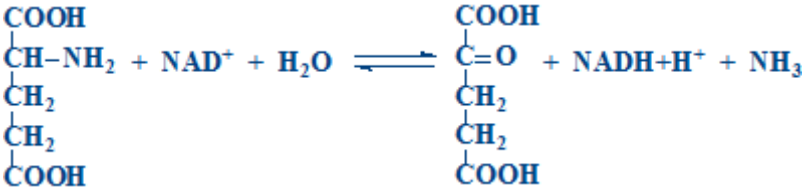
294. Select the correct statement about the following compound:



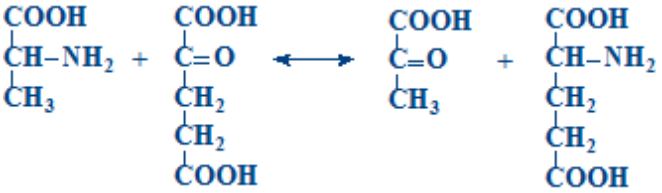
295. The following fatty acids are essential for the humans:
296. The mechanism of dietary lipids digestion products absorption in the gastrointestinal tract:
297. The products of lipid digestion absorbed in the intestine:
298. The proteins of biological membranes:
299. VLDL - select the correct statement:
300. VLDL catabolism - which statements characterize it?
301. Which compounds have an acidic functional group in their structure?
302. Which fatty acid has the lowest melting point?
303. The product of the second reaction of beta-oxidation of fatty acids is:
304. Acetoacetate - select the correct statements about the compound:
305. Activation of fatty acids (FA) in beta-oxidation of fatty acids:
306. Beta-hydroxy-beta-methyl-glutaryl-CoA can be used for:
307. Beta-oxidation involves a sequence of four reactions. Their correct order is the following:
308. Beta-oxidation of fatty acids (FA) - choose the correct statements:
309. Correct statements about the ketone bodies are:
310. How ca be used acetyl-CoA?
311. 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):
312. In one turn of beta-oxidation the fatty acid undergoes the following changes:
313. Ketone bodies - select the chemical compounds that belong to them:
314. Ketonemia - select the correct statement:
315. Name the products of the third reaction of beta-oxidation and the enzyme that catalyzes it:
316. Oxidation of fatty acids with odd number of carbon atoms - select the correct statements:
317. Oxidation of polyunsaturated fatty acids requires:
318. Select the 4th reaction of beta-oxidation and the enzyme that catalyzes it:
319. Select the correct statement about the compound:
320. The products of Acyl-CoA dehydrogenation reaction of beta-oxidation of fatty acids are:
321. The second reaction of beta-oxidation of fatty acids - select the correct statements:
322. The third reaction of beta-oxidation of fatty acids - select the correct statement:
323. Transformation of acyl-CoA in the first reaction of beta-oxidation of fatty acids:
324. Transport of fatty acids (FA) from cytoplasm into the mitochondrial matrix during beta-oxidation:
325. Utilization of ketone bodies in tissues - choose the correct statements:
326. Acetyl-CoA transport from mitochondria into cytosol during fatty acid biosynthesis:
327. Activator (1) and inhibitor (2) of acetyl-CoA carboxylase - the regulating enzyme of fatty acids synthesis:
328. Biosynthesis of fatty acid - select the correct statements:
329. Biosynthesis of malonyl-CoA during the fatty acid synthesis:
330. Differences between fatty acid oxidation and biosynthesis:
331. Enzyme (1) and reaction product (2) of the transformation of enoyl-ACP during the biosynthesis of fatty acids are:
332. Fatty acid synthase - which statements characterize it?

333. NADPH is the donor of reducing equivalents (H+) in fatty acid synthesis. Which processes is the compound produced in?
334. Reaction of beta-ketoacyl-ACP reduction during biosynthesis of fatty acids:
335. Reactions of the biosynthesis of fatty acids:
336. Synthesis of one molecule of palmitic acid requires:
337. The first cycle of the biosynthesis of saturated fatty acids with even number of carbon atoms:
338. The reaction of beta-ketoacyl-ACP synthesis during the biosynthesis of fatty acids:
339. Which enzyme is involved in acetyl-CoA transport from mitochondria into cytosol during fatty acid biosynthesis:
340. Which is the substrate of fatty acids synthesis (1) and the compound that is transporting it from mitochondria into cytosol (2)?
341. Biosynthesis of cholesterol - select the correct statements:
342. Biosynthesis of triacylglycerols - select the correct statement:
343. During the triacylglycerols biosynthesis the phosphatidic acid is:
344. Glycerol-3-phosphate is produced in the reaction of:
345. Name the source of methyl group in the synthesis of phosphatidylcholine:
346. Phosphatidylcholine can by synthesized by:
347. Phosphatidylethanolamine can be synthesized by:
348. Phosphatidylinositols - which statements characterize the chemical compounds?
349. Phosphatidylserine synthesis - select the correct statements:
350. Rate-limiting reaction of cholesterol synthesis is:
351. Regulation of cholesterol biosynthesis:
352. Synthesis of glycerophospholipids - select the correct statements:
353. The common intermediary compound of triglycerides and phosphoglycerides synthesis is:
354. Atherosclerosis - select the correct statements:
355. Liposoluble vitamins - choose the correct statement:
356. Metabolism of vitamin D:
357. Obesity:
358. Precursor of eicosanoids is the following chemical compound:
359. Select the correct statements about calcitriol:
360. The following compounds belong to the class of eicosanoids:
361. Vitamin A - select the correct statement:
362. Vitamin D - select the correct statement:
363. Vitamin E - select the correct statements:
364. Vitamin K - select the correct statements:
365. Absorption of amino acids (AA) - select the correct statements:
366. Aminopeptidases - select the correct statements:
367. Biological functions of proteins are:
368. Biological value of proteins is determined by the essential amino acids including the following one:
369. Carboxypeptidases - select the correct statements:
370. Chymotrypsin - select the correct statements:
371. Equilibrated nitrogen balance:
372. Gamma-glutamyl cycle - choose the correct statements:
373. HCl functions in the digestion of proteins are:
374. Pepsin - select the correct statements regarding the compound:
375. Negative nitrogen balance - what statements characterize it?
376. Positive nitrogen balance - choose the correct statements:
377. Neutralization of amino acids putrefaction products is characterized by:
378. Putrefaction of amino acids in the intestine:

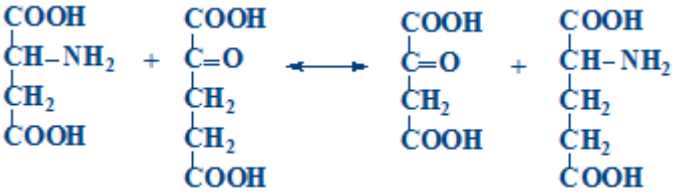
379. Select the semi-essential amino acids from the following one:
380. Tissue usage of amino acids (AA):
381. Trypsin - select the correct statements:
382. Alanine aminotransferase (ALT) - select the statements that characterize it:
383. Alanine transdeamination - select the correct statements:
384. Amino acid deamination (DA):
385. Amino acid transaminases - select the correct sttements:
386. Amino acid transamination (TA):
387. Aspartate aminotransferase (AST):
388. Direct deamination (DA) of the amino acids:
389. General pathways of amino acids catabolism are:
390. General types of amino acid deamination are:
391. Glutamate dehydrogenase - select the correct statements:
392. Indirect amino acid deamination (transdeamination):
393. Select the correct statement regarding the following reaction:



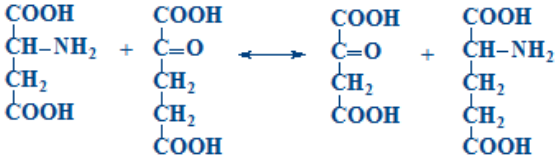
394. Select the correct statements about the following chemical reaction:

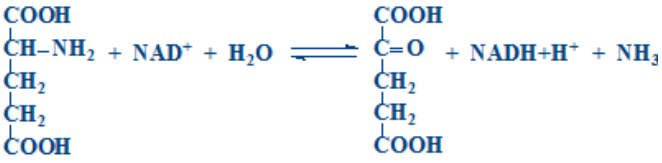


395. Select the correct statements about the shown chemical reaction:

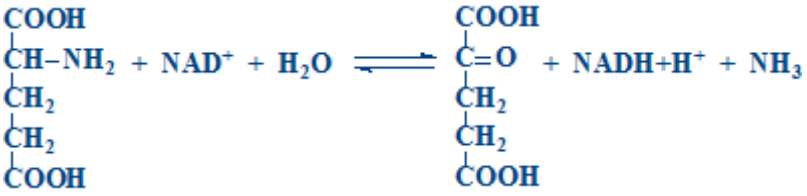


396. Select the correct statements about the shown chemical reactions:





397. Select the correct statements regarding the following reaction:



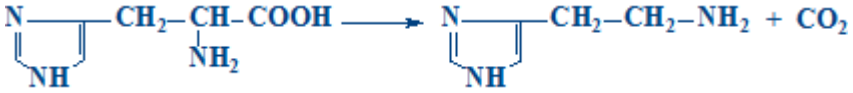
398. Transdeamination of aspartate. Select the reaction of the process (1) and the enzyme (2) that catalyzes the reaction:

399. Transreamination of amino acids:

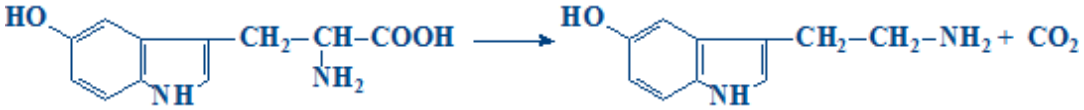
400. Chemical reaction: R-CH2-NH2 + H2O + O2 → R-COH + NH3 + H2O2

401. Decarboxilation of amino acids:

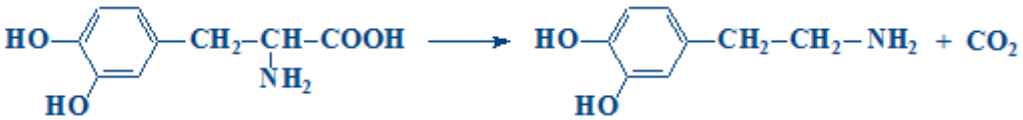
402. Select the correct statements about the following chemical reaction:



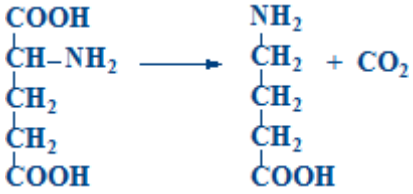
403. Select the correct statements about the following chemical reaction:



404. Select the correct statements about the following chemical reaction:



405. Select the correct statements about the following chemical reaction:



406. Serotonin is synthesized from the following amino acid:

407. The precursor of catecholamines is:

408. The precursor of histamine is:

409. Ammonia is obtained in the following processes:

410. Carbamoyl phosphate synthesis - select the first reaction of urea synthesis:

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

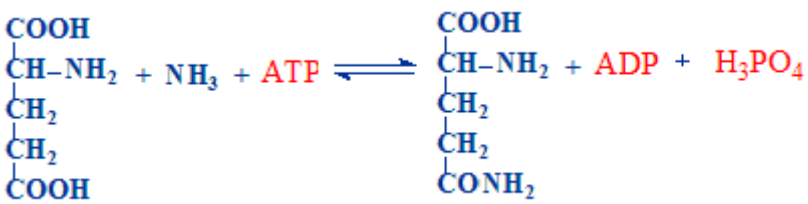
412. How many high-energy bonds are necessary for the synthesis of 100 molecules of urea?

413. NH3 can be used for the:

414. Renal excretion of ammonia:

415. Select ornithine cycle reactions:

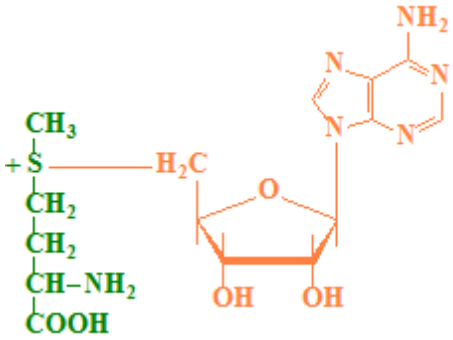
416. Select the correct statements about the chemical reaction:



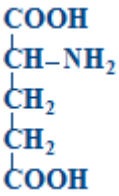
417. The connection between Krebs cycle and urea cycle:

418. The end products of simple protein catabolism are:

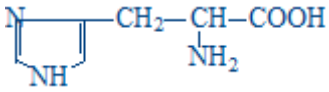
419. The final products of complete NH3 detoxification are:
420. Urea cycle (first reaction):
421. Urea cycle enzymes are:
422. Ureagenesis - select the correct statements:
423. Hereditary diseases caused by defects of the enzymes involved in the metabolism of phenylalanine and tyrosine are:
424. Albinism:
425. Alcaptonuria:
426. Biosynthesis of asparagine (Asn):
427. Biosynthesis of glutamine (Gln):
428. Catabolism of amino acids:
429. Choose the correct statements about carbohydrate and lipid metabolisms connection:
430. Choose the correct statements about protein and carbohydrate metabolisms connection:
431. Enzymes involved in amino acid catabolism:
432. Phenylalanine (Phe) and tyrosine (Tyr) are precursors of:
433. Phenylketonuria:
434. Protein and lipid metabolisms connection:
435. Protein deficiency:
436. Select correct statements about the following compound:



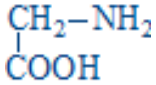
437. Select correct statements about the following compound:



438. Select the correct statement about the following compound:

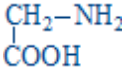


439. Select the correct statements about the following compound:

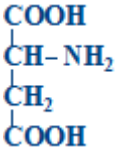


440. Tetrahydrofolic acid (TFH):
441. Tetrahydrofolic acid (THF) is the acceptor and donor of the following groups:

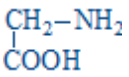
442. The following compound is involved in the synthesis of:



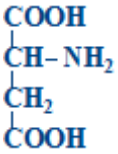
443. The following compound is involved in the synthesis of:



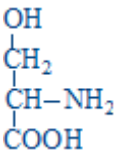
444. The following compound is involved in:



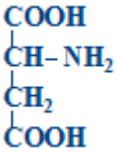
445. The following compound participates in the:



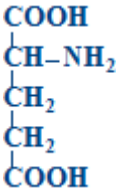
446. The following compound:



447. The following compound:



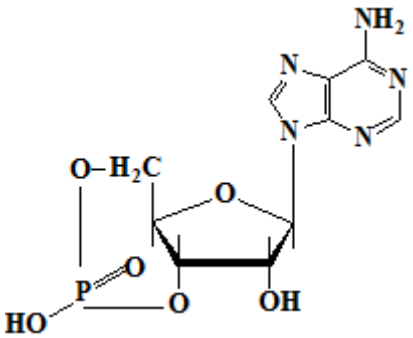
448. The following compound:



449. Select the chemical compounds involved in purine nucleotide synthesis:
450. Biosynthesis of deoxyribonucleotides:
451. Biosynthesis of cytidylic nucleotides:
452. Biosynthesis of thymidine nucleotides - select the correct statements:
453. Clinical manifestations of gout:
454. Digestion of nucleoproteins - select the correct statements:
455. GMP synthesis from inosine monophosphate (IMP):
456. Gout is characterized by the following:
457. Inosine monophosphate (IMP) - select the correct statements:
458. Phosphoribosyl-pyrophosphate synthesis (PRPP) - select the first reaction of purine nucleotide synthesis:
459. Phosphoribosylamine synthesis from phosphoribosyl pyrophosphate (PRPP) - select the second reaction of purine nucleotide synthesis:
460. Products of thymine catabolism:
461. Products of uracil and cytosine catabolism:

462. Pyrimidine nucleotide synthesis (select the reactions):
463. Pyrimidine nucleotide synthesis - select the reaction of carbamoyl phosphate synthesis (1 reaction):
464. Pyrimidine nucleotide synthesis - what is specific for the reaction of carbamoyl phosphate synthesis:
465. Regulation of the purine nucleotides synthesis - choose the correct statements:
466. Salvage of purine nitrogenous bases:
467. Select the chemical compounds that are involved in purine nucleotides synthesis:
468. Synthesis of AMP from inosine monophosphate (IMP):
469. The final product of purine nucleotides catabolism is:
470. The sourses of atoms for pyrimidine ring are:
471. Neonatal jaundice:
472. Catabolism of hemoglobin (Hb) (Hb transformation in biliverdin):
473. Catabolism of hemoglobin. What statements are correct regarding biliverdin transformation into bilirubin?
474. Catabolism of hemoglobin - select the correct statements regarding the process:
475. Causes of hepatic jaundice are the following:
476. Causes of jaundice are:
477. Conjugation of bilirubin - select the statements that characterize the process:
478. Heme biosynthesis - select the compounds required for the process:
479. Heme biosynthesis - select the correct statements about the first reaction of the process:
480. Heme biosynthesis - select the correct statements regarding the conversion of protoporphyrin IX into heme:
481. Heme biosynthesis - select the correct statements regarding the second reaction of the process:
482. Hemoglobin (Hb) - which statements characterize its structure?
483. Hemoglobin is involved in the following processes:
484. Hemoproteins - select the correct statements:
485. Hepatic premicrosomial jaundice:
486. Indirect bilirubin - select the correct statements regarding its transformations in the liver:
487. Indirect bilirubin - select the correct statements regarding the compound:
488. Intestinal stages of bilirubin metabolism are:
489. Porphyria:
490. Posthepatic jaundice is caused by:
491. Postmicrosomal hepatic jaundice:
492. Prehepatic jaundice - select the statements that characterize the disorder:
493. Renal excretion of bile pigments - select the correct statements:
494. Serum bilirubin is characterized by the following statements:
495. What changes in bile pigments occur in posthepatic jaundice?
496. What changes of bile pigments occur in hepatic jaundice?
497. Which proteins belong to the class of chromoproteins?
498. Choose the correct statements about blood transport of oxygen (O2):
499. How the exchange of O2 and CO2 occur in the lungs? Select the correct reactions:
500. How the exchange of O2 and CO2 occur in the tissues? Select the correct reactions.
501. Pathological forms of hemoglobin are:
502. Select the correct statements regarding sickle cell anemia:
503. Select the factors that determine the affinity of hemoglobin (Hb) for oxygen (O2):
504. What are the carbon dioxide blood transport forms?
505. What statement is correct regarding oxyhemoglobin?
506. Which statements are correct regarding hypoxia?
507. Which statements characterize the hormones?
508. Caffeine inhibits:

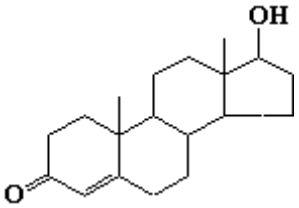
509. Select the correct statements regarding the compound:



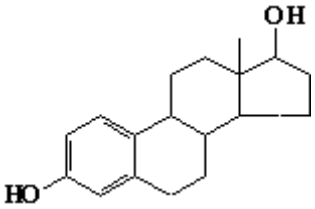
510. Cytosolic-nuclear mechanism of action of hormones - select the correct statements:
511. Hormone receptors belong to the following chemical class:
512. Membrane-intracellular mechanism of hormone action - select the correct statements:
513. Membrane-intracellular mechanism of hormones action mediated by cAMP is characterized by the following statements:
514. Phosphodiesterase:
515. Select second messengers of hormones:
516. Select the classes of hormones according to the structural classification:
517. Select the correct statements about the active form of Gs protein:
518. Select the correct statements about the membrane-intracellular mechanism of hormone action mediated by diacylglycerol (DAG) and inositol triphosphates (IP3):
519. Select the correct statements regarding adenylate cyclase:
520. Select the correct statements regarding calmodulin:
521. Select the correct statements regarding Gs proteins:
522. Select the correct statements regarding protein kinase A:
523. Select the correct statements regarding the hormones:
524. Select the hormone that has membrane-intracellular mechanism of action:
525. Select the reaction catalyzed by phosphoprotein phosphatases:
526. Which hormones have cytosolic-nuclear mechanism of action?
527. Which of the following compound is biologic activ?
528. Which processes are regulated by Ca^{2+}-calmodulin complex?
529. Which properties has phospholipase C?
530. What statement is characterizing glucagon?
531. Adrenergic receptors:
532. Biosynthesis of iodothyronines - correct statements:
533. Calcitonin - select the statements that are correct regarding the hormone:
534. Catecholamine biosynthesis - select the correct statements:
535. Diabetes mellitus is characterized by:
536. Effects of insulin on lipid metabolism are the following:
537. Effects of insulin on protein metabolism are following:
538. Extracellular calcium homeostasis is maintained by:
539. Glucagon secretion:
540. How insulin is influencing the activity of enzymes?
541. Insulin secretion is activated by
542. Metabolic effects of somatotropin:
543. Pheochromocytoma:
544. Prolactin - select the correct statements:
545. Select hormones that are synthesized in the adrenal cortex:
546. Select the adenohypophysis hormones:

547. Select the correct statements about steroid hormones:
548. Select the correct statements about the regulation of glucocorticoids synthesis and secretion:
549. Select the correct statements regarding iodothyronines:
550. Select the correct statements regarding oxytocin:
551. Select the correct statements regarding the biologic effects of the parathyroid hormone:
552. Select the correct statements regarding the biosynthesis of the pancreatic hormones:
553. Select the correct statements regarding the hormones of adenohypophysis:
554. Select the correct statements regarding the hormones that belong to the class of catecholamines:
555. Select the correct statements regarding the luteinizing hormone (LH):
556. Select the correct statments regarding adrenocorticotropin (ACTH):
557. Select the hormones that are derivatives of proopiomelanocortin:
558. Select the hormones that belong to the class of adenohypophisis somatomammotrop hormones:
559. Select the hormones that belong to the class of adenohypophysis glycoprotein hormones:
560. Select the metabolic and physiologic effects of catecholamines:
561. Select the metabolic effects of glucagon:
562. Select the metabolic effects of insulin:
563. Select the metabolic effects of T3 and T4:
564. Select the signs of hyperparathyroidism:
565. Select the signs of hypoparathyroidism:
566. Select the statements that characterize glucagon:
567. Select the tropin-release inhibiting hormone (statin):
568. Select the tropin-releasing hormones (liberins):
569. Somatostatin:
570. Somatotropin (growth hormone) - select the correct statements regarding the compound:
571. The mechanism of insulin action is characterized by the following statements:
572. Thyroglobulin:
573. Thyrotropin (TSH) - select the correct statements regarding the compound:
574. Vasopressin - select the correct statements about the compound:
575. What are correct statements regarding the hypothalamus hormones?
576. What statements are characterizing 1,25-dihydroxy-cholecalciferol - calcitriol?
577. Which are the metabolic effects of glucocorticoids?
578. Which are the metabolic effects of T3 and T4?
579. Which are the signs of thyroid hyperfunction?
580. Which are the signs of thyroid hypofunction in adults (myxedema)?
581. Which compounds are transporting iodothyronines in the blood?
582. Which factors influence the synthesis and secretion of iodothyronines?
583. Which is the metabolic effect of calcitonin?
584. Which processes are stimulated by insulin?
585. Which statements are characterizing insulin?
586. Which statements are correct regarding the hormones of neurohypophysis?
587. Which statements are correct regarding the parathyroid hormone?
588. Which statements characterize the follicle stimulating hormone (FSH)?
589. Which statements are correct regarding Angiotensin II?
590. Hyperaldosteronism (Conn's syndrome) is characterized by:
591. Hypocorticism (Addison's disease) is characterized by:
592. Regulation of sex hormones synthesis and secretion:

593. Select physiological effects of the following hormon:

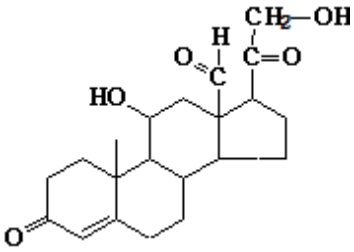


594. Select physiological effects of the following hormon:

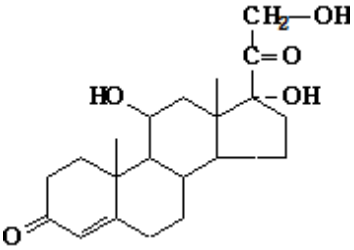


595. Select the correct statements about the Cushing's syndrome:

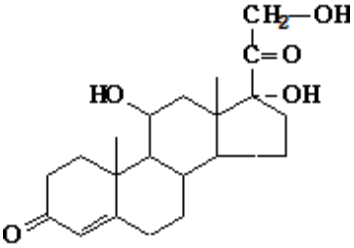
596. Select the correct statements about the functions of the following hormone:



597. Select the correct statements about the mechanism of action of the following hormon:



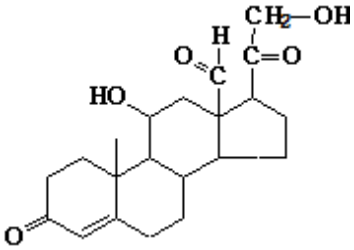
598. Select the correct statements about the metabolic effects of the following hormon:



599. Select the correct statements regarding aldosterone synthesis and secretion:

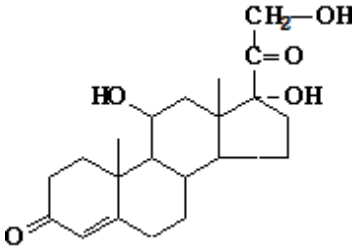
600. Select the correct statements regarding the androgens:

601. Select the correct statements regarding the following hormone:

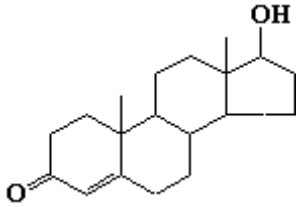


602. Select the correct statements regarding the medical usage of corticosteroids:

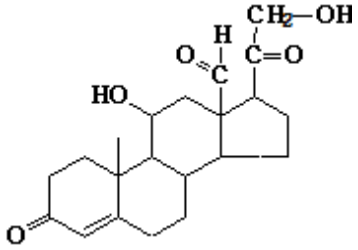
603. Select the correct statements regarding the metabolic effects of the following hormone:



604. Select the correct statements regarding the sex hormones:
605. Select the metabolic effects of the following hormon:



606. Select the sex hormones from the following one:
607. Which processes are stimulated in the kidney by the following hormone?



608. Which statements are correct regarding the female sex hormones?
609. Azotemia occurs in following cases:
610. Buffering capacity of hemoglobin is determined by the following amino acid radical:
611. Buffering capacity of plasma proteins is determined by the following amino acids:
612. Electrolyte composition of the blood:
613. Fibrinogen - select the correct statements regarding the compound:
614. Functions of blood are the following one:
615. Hyperproteinemia. Which statements characterize the condition?
616. Hypokalaemia. Which statements characterize the condition?
617. Hypoproteinemia. Which statements characterize the condition?
618. Metabolic acidosis can be caused by the following conditions/diseases:
619. Metabolic alkalosis can be caused by the following conditions:
620. Plasma globulins. Which statements are correct regarding the compound?
621. Plasma proteins - select the correct statements:
622. Respiratory acidosis. Which conditions/diseases can determine it?
623. Respiratory alkalosis. Which are the causes of the condition?
624. Select buffer system that is present only in the erythrocytes:
625. Select buffer systems that are present both in the plasma and erythrocytes:
626. Select form the following list the organic compounds of the blood:
627. Select the blood cells:
628. Select the buffer system that is present only in blood plasma:
629. Select the correct statements about iron and its metabolism:
630. Select the correct statements about the changes of plasma calcium:
631. Select the correct statements regarding the blood calcium:
632. Select the enzyme that is a marker of heart diseases:

633. Select the non-nitrogen containing organic compound in the blood:
634. Select the non-protein nitrogen-containing compound of the blood:
635. Serum albumin - select the correct statements regarding the protein:
636. What are the functions of plasma proteins?
637. Which of the following compounds is transported by the serum albumins?
638. Which systems are involved in the maintenance of the blood physiologic pH?
639. Conversion of fibrinogen to fibrin - select the correct statement:
640. Fibrinolysin - select the correct statements:
641. Heparin - select the correct statement regarding the compound:
642. Polymerization and stabilization of fibrin (clot formation) - select the correct statements regarding the process:
643. Prothrombin - select the correct statements regarding the compound:
644. Select platelet coagulation factors:
645. Select the anticoagulant compound:
646. Select the anticoagulants from the following compounds:
647. Select the clotting factor that initiates the extrinsic pathway of blood coagulation:
648. Select the plasma clotting factor that initiate the intrinsic pathway of blood coagulation:
649. Select the clotting factors involved only in the intrinsic pathway of blood clotting:
650. Select the clotting factors that are involved only in the extrinsic pathway of blood coagulation:
651. Select the fibrinolytic system factor:
652. Select the the clotting factors that are involved both the intrinsic and extrinsic pathways of blood coagulation: :
653. The following compounds are involved in blood clotting (additional to plasma factors):
654. Thrombin - select the correct statements regarding the compound:
655. What is the role of vitamin K in blood clotting?
656. Which enzymes are transforming plasminogen into plasmin?
657. Which factors are involved in blood clotting?
658. Which of the following are blood cells?
659. Functional classification of serum enzymes - select the correct classes:
660. Liver and protein metabolism:
661. Liver function is:
662. Select the enzymes that are markers of heart diseases:
663. Select the enzymes that are markers of liver diseases:
664. Select the organo-specific enzyme of skeletal muscles:
665. Select the secretory enzymes:
666. The liver and carbohydrate metabolism:
667. The role of the liver in lipid metabolism: