1. Rheumatic patient has such symptom as destruction of cartilage cells. Which cell organelles take active part in this pathological process?
2. Lysosomes
3. Microtubules
4. Cell center
5. Ribosomes
6. Golgi complex
7. There is a big wound surface after extraction of a tooth. Active regeneration has already begun. The first stage of regeneration is wound cleansing from damaged and dead tissues. Which cell organelles participate in this process?
8. Lysosomes
9. Mitochondria
10. Cell center
11. Peroxisomes
12. Golgi complex

1. Cells of the laboratory animal have been irradiated by X-rays. As a result many fragments of albumin (protein) have appeared in the cytoplasm. What cell organelle will utilize them?
2. Lysosomes
3. Golgi complex
4. Cell center
5. Endoplasmic reticulum
6. Ribosomes
7. Electron microscopy reveals the cell which nucleolus and nuclear envelope are absent. Chromosomes are freely disposed in the cytoplasm; centrioles migrate to poles of the cell. What phase of cell cycle is it?
8. Prophase
9. Anaphase
10. Metaphase
11. Telophase
12. Interphase
13. Sometimes for determination of the human sex, it is necessary to research the somatic cells. Which structure of the nucleus can give information about human sex?
14. Barr body
15. Uncoiled chromatin
16. Euchromatin
17. Peripheral chromatin
18. Facultative chromatin
19. Mucopolysaccharidosis is a storage disease. Because of absence of specific enzymes, the disintegration of mucopolysaccharides is impaired and their accumulation in the cell takes place. Pathology of what organelles occurs in this situation?
20. Lysosomes
21. Mitochondria
22. Rough endoplasmic reticulum
23. Cell center
24. Smooth endoplasmic reticulum
25. In the slide with mitosis, cell was discovered with chromosomes lying in equatorial plane like a star. What mitotic stage is present in the slide?
26. Metaphase
27. Anaphase
28. Telophase
29. Interphase
30. Prophase
31. Basophilia of thyrocyte cytoplasm was detected in bioptic material of thyroid gland. Activity of which organelle is basophilia connected with?
32. Rough endoplasmic reticulum
33. Smooth endoplasmic reticulum
34. Mitochondria
35. Lysosomes
36. Golgi complex
37. Infectious hepatitis is accompanied by destruction of hepatocyte membranes. What substances must be present in the drug for their renewal?
38. Phospholipids
39. Polysaccharides
40. Adenosine triphosphates
41. Aminoacids
42. Ribonucleoproteins
43. Experimental studies of a new medical drug revealed the effect of blocking of the tubulins synthesis in dividing cells. What stages of a cell cycle are damaged by this drug?
44. Metaphase and anaphase
45. Synthetic period of interphase
46. Telophase
47. Postmitotic period of interphase
48. Premitotic period of interphase
49. Mitosis of somatic cell ended by formation of one tetraploid cell under the influence of the experimental medical drug. In what phase of mitosis did this disorder occur?
50. Anaphase
51. Metaphase
52. Prophase
53. Telophase
54. All mentioned above
55. Some cardiac diseases are accompanied by the disorder of oxidative phosphorylation in mitochondria. Deficiency of what vitally important substance occurs in cardiomyocytes in that case?
56. ATP
57. DNA
58. Protein
59. RNA
60. Lipids
61. One of hepatocyte's function is detoxication. Liver cells participate in the neutralization of toxic metabolic products, including hydrogen peroxide. Which cell organelles have inside enzyme splitting hydrogen peroxide?
62. Peroxisomes
63. Lysosomes
64. Golgi complex
65. Endoplasmic reticulum
66. Mitochondria
67. During postsynthetic period (G2) of cell cycle the synthesis of protein tubuline which takes part in the formation of mitotic spindle was disturbed. It can cause disorder of:
68. Chromosome separation
69. duration of mitosis
70. Chromosome despiralization
71. Chromosome spiralization
72. Cytokinesis
73. Long term effects on the body of toxic substances has led to a significant reduction in protein synthesis in hepatocytes. What organelles are suffered from intoxication most of all?
74. Rough endoplasmic reticulum
75. Mitochondria
76. Microtubules
77. Lysosomes
78. Golgi complex
79. An electron microphotogaph shows organelle which represents polyprotease large complex consisting of the tube-like and two regulatory units located at both ends of the organelle. The function of this organelle –proteolysis. Name the organelle.
80. Proteasome
81. Centrioles
82. Inclusion
83. Ribosome
84. Golgi complex
85. The electron micrograph shows a cell in which nucleoli and the nuclear membrane are absent. Chromosomes are freely placed in the cytoplasm, centrioles migrate to the poles. In which phase of the cell cycle the cell is?
86. In prophase
87. In anaphase
88. In metaphase
89. In telophase
90. In interphase
91. The patient was hospitalized with poisoning. Found that detoxification mechanisms were broken in liver. Function of what organelle was broken first of all?
92. Smooth endoplasmic network
93. Mitochondria
94. The granular endoplasmic reticulum
95. Golgi complex
96. Ribosome
97. The human diet is dominantly with a large amount of carbohydrates. What structures will appear in the cytoplasm of hepatocytes?
98. Glycogen granules
99. Drops fat
100. One large drop of fat
101. Increase in the number of free ribosomes
102. Inclusions of lipofuscin
103. The cell organelles, comprising cisternae with flattened central portion and extended in the periphery and small bubbles were detected in the electron micrograph of spinal node. Name these organelles?
104. Golgi complex
105. Centrioles
106. Lysosomes
107. Peroxyoms
108. Mitochondria
109. The histological examination of the liver of the animals, feeding with excess of carbohydrates showed a significant amount of glycogen granules. What group of cell structures relates glycogen?
110. Trophic inclusion
111. Secretory inclusion
112. Excretory inclusion
113. Pigment inclusion
114. Organelles of special purpose
115. Mouse swim in the pool during long time. Morphologic study of their skeletal muscle revealed an increase in the number of mitochondria with signs of increased activity: multiple cristae and enlightened matrix. What function of the cell is in an extremely stressed state?
116. Energy
117. Secretory
118. Synthetic
119. Protective
120. Transport
121. In the study of plasmolemma of pancreatic cells after impact of drugs was revealed that the structure of the glycocalyx is destroyed. Which of the chemical components is glycocalyx?
122. Oligosaccharides
123. Proteins
124. Lipids
125. Minerals
126. Water
127. If blastocyst remains covered up by membrane of fertilization, the synthesis of lytic enzymes by the trophoblast cells is inhibited. Which process of embryogenesis could be held up or will not occur?
128. Implantation
129. Delamination
130. Immigration
131. Gastrulation
132. Epiboly
133. In the slide of human embryo embryonic disk is found with two layers of cells: endoderm and ectoderm. On what stage of embryonic development was the embryo?
134. Gastrulation
135. Progenesis
136. Neurulation
137. Histogenesis
138. Organogenesis
139. Disorder of endoderm differentiation was found in embryonic material. Development of what organ can be changed?
140. Stomach
141. Aorta
142. Heart
143. Kidney
144. Salivary glands
145. During forensic medical examination of woman an embryo at early gastrulation stage was found. Name the place of its normal localization.
146. Uterine wall
147. Abdominal cavity
148. Ampullar segment of the oviduct
149. Uterine segment of the oviduct
150. Uterine cavity
151. Gastrulation or formation of germinal layers in embryo occurs in different ways. What is the way of the human ecto- and endoderm formation?
152. Delamination
153. Invagination
154. Epiboly
155. Migration
156. Invagination and epiboly
157. Myocardiodystrophy is accompanied by disorder of cardiomyocyte metabolism. What is the embryonic source of development of these cells?
158. Myoepicardial plate
159. Myotomes
160. Endoderm
161. Ectoderm
162. Mesenchyme
163. Implantation of embryo in endometrium consists of two phases – adhesion and invasion. What is the adhesion phase?
164. Attachment of the blastocyst to the surface of the endometrium
165. Decrease of secretion uterine glands
166. Destruction of connective tissue of endometrium
167. Destruction of endometrial epithelium
168. Activation of secretion uterine glands
169. A human embryo consists of two blastomeres. Name the place of its normal localization.
170. Uterine tube, near its ampullar segment
171. Proxymal segment of uterine tube
172. Uterine cavity
173. Abdominal cavity
174. Ovary
175. A human embryo consists of light small blastomeres at the periphery, dark big blastomeres located near its one pole and cavity inside. What is the name of this embryo?
176. Blastocyst
177. Embryonic disk
178. Morula
179. Zygote
180. Gastrula
181. An embryo attached to endometrium was found in the uterine cavity. What is the development stage of this embryo?
182. Blastocyst
183. Zygote
184. Morula
185. Gastrula
186. Neurula
187. The disintegration of embryo fertilization membrane has happened in the uterine tube. What pregnancy complication is possible in this case?
188. Implantation of embryo in the tube's wall
189. Returning back blastocyst in ampullar segment of the tube
190. Death of embryo
191. Invagination of blastocyst wall
192. Formation of two blastocysts
193. Two vesicles (amniotic and yolk sacs) which have contact between each other are visible in a slide of a 10-day old human embryo. What is the name of the structure that is located in the place of their contact?
194. Embryonic disk
195. Roof of yolk sac
196. Bottom of amniotic sac
197. Amniotic stalk
198. Extraembryonic mesoderm
199. What is the type of the human ovum?
200. Secondary olygolecithal
201. Primarily olygolecithal
202. Mesolecithal
203. Highly telolecithal
204. Centrolecithal
205. It is known that process of gastrulation begins in the 2nd week of human embryogenesis. What type of gastrulation is specific for human embryo?
206. Delamination and migration
207. Epiboly
208. Invagination
209. Migration and invagination
210. Epiboly and invagination
211. Name the early stages of human embryogenesis in a consecutive order.
212. Fertilization, cleavage, gastrulation, formation of body flexion
213. Fertilization, formation of body flexion, gastrulation
214. Fertilization, gastrulation, cleavage, formation of body flexion
215. Fertilization, formation of axial organs, gastrulation, formation of body flexion
216. Fertilization, formation of axial organs, cleavage, gastrulation
217. What are the features of the ovum structure compared with the somatic cell structure?
218. Haploid set of chromosomes and yolk inclusions in the cytoplasm
219. Haploid set of chromosomes and absence of organelles
220. Absence of ribosomes and mitochondria
221. Diploid set of chromosomes and presence of plastid in the cytoplasm
222. Absence of perfected nucleus and yolk inclusions in the cytoplasm
223. What set of chromosomes does the spermatozoon have?
224. Haploid
225. Diploid
226. Triploid
227. Polyploid
228. Incomplete
229. What is the name of the process of spermatozoa activation in the woman's genital tract?
230. Capacitation
231. Acrosome reaction
232. Reotaxis
233. Negative chemotaxis
234. Positive chemotaxis
235. What is acrosomal reaction?
236. Separation of acrosome from the head of spermatozoon
237. Fusion of cell membranes of spermatozoon and ovum and excretion of lytic enzymes
238. Penetration of acrosome of spermatozoon in the ovum
239. Destruction of the ovum tunics
240. Destruction of the acrosome
241. After the blastocyst stage what is the following stage of the embryonic development?
242. Gastrulation
243. Histogenesis
244. Cell differentiation
245. Formation of the body
246. Organogenesis
247. Derivative of the ectoderm is:
248. Epidermis of skin
249. Smooth muscle tissue
250. Connective tissue
251. Epithelium of the stomach
252. Skeletal tissues
253. In the histological slide it can be seen part of an embryo consisting of basophilic cells which are connected with each other by processes. Between cells lies the amorphous intercellular substance. What is it?
254. Mesenchyme
255. Dorsal mesoderm
256. Ectoderm
257. Endoderm
258. Ventral mesoderm
259. Outer germinal layer – ectoderm is destroyed in the experiment on a frog embryo. What morphological structure will not be further developed in this embryo?
260. Epidermis
261. Somites
262. Nephrotome
263. Splanhnotome
264. Bone tissue