Test 1 Practice Questions : Raj, Waker, & Balliett

1. What is the smallest structural and functional unit in the body?
2. What four things is the nucleus made up of?
3. The nucleus and cytoplasm make up what?
4. What are the three functions of the nucleus?
5. What is chromatin comprised of?
6. What is the nucleolus comprised of?
7. What is the nuclear sap comprised of?
8. What does the cytoplasm consist of?
9. What are the three functions of cytoplasm?
10. What are organelles?
11. What is the inclusion?
12. What is the cytoplasm matrix?
13. What are the two types of organelles and what's the difference?
14. What is abbreviated as EM?
15. What organelle has 2 membranes?
16. What are the two types of endoplasmic reticulum?
17. How many membranes do sER and rER have?
18. What does mitochondria do?
19. What provides a ribosomal function in the mitochondria?
20. What organelle is a network of channels?
21. What do lysosomes do?
22. What do peroxysomes do?
23. What does Golgi-EX do?
24. What is the basic function of the microtubules?
25. What are centrioles used for?
26. Under an EM, what can be seen with cell membranes?
27. What is a cell membrane composed of and what are their percentages?
28. What is endocytosis?
29. What are two types of endocytosis?
30. What is the function of carbohydrates in a cell membrane?
31. What is the function of lipids in cell membrane?
32. What is the function of proteins in a cell membrane?
33. What is inside product going out?
34. What are the three cell membrane areas?
35. What are microvilli?
36. What is cilia?

37. What are sterocilia?
38. There are _____ of _____ that provide movement for the cilia.
39. Dinein arms connect to the _____, how are they connected to the center of the cilia?
40. What are the four primary tissues of the body?
41. What is Kartagener's syndrome?
42. What are the three junctional complexes found in the lateral formation and what does each primarily do?
43. What is the irreversible dilation of the bronchioles?
44. What is the juxiposition of the poles?
45. What are the three primary functions of epithelial tissue?
46. What are the two secondary functions of epithelial tissue?
47. Epithelial tissue is comprised of _____ and is a_____.
48. What is epithelial tissue capable of?
49. What type of subtissue is usually secretory and lacks a free surface?
50. How are epithelial tissues classified?
51. What are two examples of epitheliod tissue?
52. What is the superficial layer of the BM?
53. What is the reticular layer of the BM?
54. What are the 3 roles of the Basement Membrane?
55. What two complexes arise from the thickening of the BM?
56. Cuboidal cells are usually used in what function?
57. Columnar cells are used for _____, and _____.
58. Where are columnar cells often found?
59. What type of tissue is found in the bronchus linings?
60. Stratified cells get their name from what?
61. What are the two types of stratified squamous and where are they found?
62. Describe a transitional epithelium.
63. What is transitional epithelium used for?
64. Give an example where transitional cells can be found.
65. What do goblet cells do?
66. Simple squamous epithelium lining a vessel is renamed _____.
67. What are the types of ducts?
68. Describe the types of secretion?
69. What type of gland acts on the neighboring cell?
70. What kind of gland lacks a duct?
71. What kind of gland secretes via a duct?

72. What is the function of blood?
73. What is the hematocrit?
74. What is plasma comprised of?
75. What are the three main formed elements?
76. What are the three plasma proteins?
77. In the plasma, what is a glycoprotein produced by the liver that acts as a carrier protein?
78. Describe fibrinogen.
79. Describe albumin.
80. Describe Globulin.
81. How many RBC's are in the normal adult?
82. What is the average life span of RBC's?
83. RBC's start as _____, become, _____, and finally _____.
84. Why do RBC's have a short life span?
85. Increased RBC's is called _____, while reduced is _____.
86. If a rise in RBC's is do to a disorder it is called _____.
87. Leukocytes can grouped as _____ and _____.
88. The sebaceous gland is called a _____ gland.
89. What are the granulocytes with their percentages?
90. What are the agranulocytes with their percentages?
91. Why are they called agranulocytes?
92. What cell is related to mast cells?
93. Describe the appearance of basophils.
94. Basophils secrete _____ which stimulates _____, contain granules with _____, and are the _____ of anaphylaxis.
95. Who are the first wave defenders, or peasants if you will?
96. Eosinophils have _____ nuclei.
97. Neutrophils are capable of _____ and function in _____.
98. The life span of Neutrophils is _____, but can be extended if _____.
99. Momma like peroxide, sonny doesn't, who is the momma and who is sonny?
100. Eosinophils are seen in large numbers at what sites?
101. _____ are the precursors of the mononuclear phagocytic system?
102. What is the normal number of platelets?
103. Platelets have no _____, live for _____, and are derived from _____.
104. What are the largest of the white blood cells?
105. Platelets play are role in what three things?
106. Lymphocytes are the functional cells of _____.

107. Monocytes have a life span of _____ in blood.
108. B lymphocytes form _____, and initiates _____.
109. T lymphocytes have _____ lives and differentiate into what 3 cells?
110. T cells initiate what protective system?
111. What is decreased platelet count?
112. What is increased platelet count?
113. What do t-helper cells do?
114. What do cytotoxic t cells do?
115. What do TS cells do?
116. What muscle has a spindle shape (thin, fat, thin)?
117. What is the sarcolema?
118. Smooth muscle has a _____ sarcoplasm and fibers in _____.
119. Why do smooth muscle lack fast twitch?
120. Name the muscle structures from largest to smallest.
121. What are the three muscle membranes?
122. Where is the nucleus located on skeletal muscle?
123. The thin myofilament is _____, the think myofilament is _____.
124. Along innervations, what initiates the motor muscle contraction?
125. What innervates sensory paths?
126. What band is dark, and what types of myofilaments does it contain?
127. What band is light, and what types of myofilaments does it contain?
128. What do actin filaments attach to?
129. What is the sarcomere?
130. Where do myosin filaments attach, and what is the myosin only range called of the sarcomere?
131. What is a triad?
132. When skeletal muscle contacts, what is the mechanism of the contraction?
133. Where is skeletal muscle triads seen?
134. When there is a contraction, which myofibril shortens?
135. What is a special property of cardiac muscle?
136. Where is the nucleus in cardiac muscle?
137. Cardiac cells are _____.
138. Cardiac cells are joined by the _____.
139. What are large in cardiac muscle?
140. Instead of Triads, Cardiac muscle has _____ which are found at the _____.
141. Intercalated disks are the site of _____, allowing for _____.

142. What is endothelium's most important function?
143. What are the three layers of the heart, from inside out.
144. The tunica media is surrounded by what two layers?
145. What three layers make up the tunica intima?
146. Fibroblasts love to produce what in vessels?
147. What are elastic arteries also known as and give two examples.
148. What are vaso vasorums and where are they found?
149. What are the nerves found in the blood vessel walls called?
150. Describe the thickest layer of Elastic arteries.
151. What are muscular arteries also known as?
152. Muscular arteries have prominent _____.
153. Muscular arteries have more _____ in the tunic media.
154. What serve as a flow regulator to capillaries?
155. Describe an arteriole.
156. What is fluid coming out of the capillaries called?
157. Describe the structure of a capillary.
158. What do pericytes do?
159. What are the three types of capillaries?
160. Describe and give examples of fenestrated capillaries.
161. Describe and give examples of continuous capillaries.
162. Describe and give examples of discontinuous capillaries.
163. What are the four functions of endothelial cells?
164. What venules have no tunica media and a single layer?
165. Muscular venules have both a _____ and a _____.
166. What is significant about medium veins?
167. What is significant about large veins?
168. What carries fluid from tissue spaces to the venous system?
169. Lymphoid tissue is a special form of _____ tissue.
170. Give examples of each capsule related lymph tissue types.
171. What are the two primary lymphoid tissues and what do they create?
172. What does secondary lymphoid tissue do and give examples.
173. T lymphocytes are associated with _____ immunity.
174. B lymphocytes are associated with _____ immunity.
175. B cells differentiate into _____ and _____.
176. What do plasma cells do?
177. What are the functions of the thymus?

178. What does the hemothymic barrier do?
179. The Hemothymic barrier consists of what 5 layers, from inside out.
180. The HB is found where?
181. Where is the thymus located?
182. Does the thymus have a capsule?
183. What provides the reticular framework in the lobules of the thymus?
184. The cortex of the thymus has _____, with no _____.
185. The medulla contains _____ and _____.
186. What are lymphocytes in the thymus known as?
187. Hassal's corpuscles are flattened _____ in _____ layers that secrete _____.
188. The palatine tonsils are _____ with the free surface covered by _____.
189. The invagination of the epithelium of the tonsils are called _____.
190. What in the basal capsule separates the crypts and lymphatic tissue?
191. From the tonsil, what is often expelled?
192. What is the function of the tonsil?
193. What is the increased destructive capabilities of the spleen, and what does it lead to?
194. What is the spleen?
195. What is the white pulp known as?
196. What are the localized expansions of white pulp called?
197. What does the red pulp consist of?
198. Where are the germinal centers of the spleen located?
199. What separates the red pulp and what is the separators made up of?
200. What do splenic sinuses allow for?
201. What loops around the splenic sinuses?
202. What is the cause of a swollen gland?
203. The medullary cords are separated by what?
204. What is in a medullary sinus?
205. What is the function of medullary sinuses?
206. Medullary sinuses merge to form _____.
207. The lymphatic nodule of the cortex is known as a _____.
208. Where is the nodule dark stained and why?
209. Where is the nodule pale when stained?
210. What is the ring of lymphocytes encircling the germinal center?
211. The cortex near the medulla is known as the _____ and has no _____.
212. What brings lymph into the lymph nodes?
213. What is the area in which the lymph and blood vessels enter an exit?

214. What is found beneath the capsule of the lymph node?
215. Outside in it goes _____ sinus, _____, _____ sinus, to _____ sinus.
216. What are the three layers of the Basement membrane of CT?
217. The lamena densa is comprised of _____ collegen fibers.
218. Connective tissue proper is relatively _____ tissue.
219. What are the 6 main types of CT proper?
220. What are the resident cells?
221. What are the Visitor cells?
222. What cells originate in the CT?
223. Fibroblasts can _____ or _____ collegen because it makes _____.
224. Macrophages are sometimes called _____.
225. What do macrophages do?
226. What is white fat and what does it do?
227. What is brown fat?
228. Where can brown fat be found on adult humans?
229. What is the cellular source of circulating immunoglobins?
230. The nucleus of plasma cells have a characteristic _____ appearance.
231. The cytoplasm of plasma cells are packed with _____ indicating _____ formation.
232. Mast cells contain numerous _____, a prominent _____, and most importantly _____.
233. The granules of mast cells contain what two substances?
234. What is histamine a mediator of?
235. What is heparin for?
236. What two things comprise the amorphous ground substance?
237. What is a major structural protein in extracellular matrix of CT?
238. Collegen is in a _____ formation, known as _____ of molecules called _____.
239. All collegens associate into _____, sometimes as _____, usually as _____.
240. All collegen are _____ to a degree.
241. How many types of collegen is there?
242. What are the major types of collegen?
243. What is the most abundant type of collegen?
244. Type I is found in _____, Type II is found in _____.
245. What is the function of loose CT?
246. Where is loose CT found?
247. What type of tissue has a bunched wavy appearance?

248. What are the functions and locations of Dense regular CT?
249. Where is dense irregular connective tissue found?
250. Elastic fibers can stretch to _____ times there length.
251. Reticular fibers are _____, but in very _____.
252. Reticular connective tissue gives _____.
253. Adipose cells have the appearance of a _____ and are filled with _____.
254. What type of cartilage is type II collagen, and what type is type I collagen?
255. The order of cartilage cells go from _____, to _____, to _____.
256. Hyaline cartilage's fibers are not seen why?
257. At the periphery of condensation are _____ which lay down the _____.
258. What are the two layers of the cartilage surrounding membrane?
259. A single chondrocyte occupies a _____.
260. What is a cell nest?
261. Each lacuna in a cell nest is termed a _____.
262. Which chrondocytes tend to be flattened?
263. What binds water and provides a meshwork resilience in hyaline cartilage?
264. What is the significance of proteoglycans negative charge?
265. What protein plays a role in calcification of hyaline cartilage?
266. What protein promotes chondroblasts and chondocytes to adhere to collagen?
267. Fibrocartilage contains thick bundles of _____.
268. What secretes chondronectin?
269. Where is Fibrocartilage structurally found?
270. Name site examples of Fibrocartilage.
271. The matrix of elastic cartilage is the same as hyaline except _____.
272. Elastic cartilage is always surrounded by _____.
273. Where is elastic cartilage found?
274. Elastic cartilage never _____.
275. Differences in cells are due to _____.
276. The golgi apperatus is a _____ of _____ plates of flattened _____.
277. What are the stacks of the golgi apperatus called?
278. Golgi apperatus creates what that is good for joint health?
279. Where does enzyme/lysomal production originate?
280. Lysosomes contain a diverse array of _____ that become active at _____.
281. The pH of lysosomes is maintained by the _____.
282. What bud via regulated exocytosis?
283. In true endocytosis, the membrane _____.

284. Where does true endocytosis occur?
285. Clathrin are a _____, with a _____ assembled to form a _____.
286. What two dominate types of cell perform phagocytosis?
287. Humans, unlike other animals, cannot produce _____ from sugar.
288. Mitochondria produce ATP by _____.
289. Mitochondria _____ during each cell cycle.
290. Mitochondria has its own _____ inherited from the _____.
291. Peroxisomes found in the _____ detoxify alcohol via what enzyme?
292. The cytoskeleton is comprised of what three major structures?
293. Intermediate filaments are _____/_____ structures that resist _____.
294. Intermediate filaments require _____ for polymerization.
295. What are the types of Intermediate filaments?
296. Where are keratin IF found?
297. Where are neuofilament IF found?
298. Where are vimentin IF found?
299. What forms the rope-like structures of Intermediate Filaments?
300. What are highly conserved structures?
301. Where is cilia found?
302. Where is flagella found?
303. Microtubles are involved in what functions?
304. What are the microtubules that have the dinein arms and spokes called?
305. Tight junctions are important in what epithelial tissues?
306. What are 4 types of anchoring junctions?
307. The desmosome junction is _____ to _____.
308. What is the cytoskeleton of desmosomes made of?
309. What two anchoring junction are calcium dependent?
310. Hemidesmosomes connects _____ to _____.
311. What is the hemidesmosomes cytoskeleton made of?
312. What facilitates the chemotaxis of white blood cells?
313. The junction of focal contacts is _____, the skeleton is made of _____.
314. What is the linker glycoprotein in adhesion belts?
315. The junction of adhesion belts is _____, the skeleton is made of _____.
316. Communicating junctions are formed by _ units of _____ a transmembrane protein.
317. Cadherins are _____ dependent and are _____ molecules.
318. Endothelial cells produce _____ at the site of inflammation.
319. GAG's draw water resulting in _____ which resists _____.

320. GAG's work because the ____ charge attacts _____, which attracts _____.
321. Selectins are sticky with sugar, thus attracting _____.
322. GAG's also act as a _____ in the kidney and bind _____.
323. GAG's look like a _____ and are _____.
324. Every third amino of collegen is what amino acid?
325. There are numerous _____ and _____ residues in collegen that require _____.
326. When secreted outside of a cell it is known as _____ and then cleaved into _____.
327. What is a Vitamin C deficiency?
328. What is a major determinate of metabolic activity?
329. What causes smooth muscle to contract?
330. What is SmMLCK?
331. What are the functions of skeletal muscle?
332. Actin forms _____ in the presence of _____ and _____.
333. What is f-actin?
334. Actin in skeletal muscle is a combination of what three things?
335. How many actin filaments surround each myosin?
336. What does Tropomyosin do?
337. What does Troponin do?
338. The two pairs of _____ chains in myosin are associated with _____.
339. What do the globular heads of myosin contain?
340. What connects thick filaments to the Z disk?
341. What extends from z adjacent to thin filaments?
342. When the sarcoplasmic reticulum is at a resting state, there is what?
343. The sacroplasmic reticulum surround what band?
344. Describe the Sliding filament theory? Hint, 5 steps.