MINERAL & BONE METABOLISM
1. Bone modeling
2. 20%
3. Intestinal absorption, renal clearance, and hormonal regulation
4. Bone
5. bone structure, coagulation, plasma membrane potential, muscle contraction and neurotransmission, enzyme cofactor
6. increased, tetany
7. Acidosis
8. bone mineralization and phospholipid structure in cell membranes
9. 50%
10. Quickly accesible calcium at the surface of a bone
11. interchange between excellular fluid & bone, urine, and intestinal contents
12. Chief cells, plasma calcium
13. bone resorption, calcitrol, calcium reabsorption by kidneys :: PO4 reabsorption by kidneys
14. Increase reabsorption of Calcium and phosphorus
15. Decrease reabsorption of Ca and PO4
16. Normal squamous and breast epithelial cells (heavy amounts from tumors)
17. Acts like PTH, increases plasma Ca significantly
18. Primary Hyperparathyroism or Malignancy
19. Increase in IgG, and calcium binds to to IgG
20. Hypoalbuminemia :: Hypoparathyroidism
21. respiratory paralysis, cardiac arrest, muscle injury, and severe dehydration
22. Tetany, agitation, delerium, muscle weakness, and cardiac arrest
23. cirrhosis, malabsorption syndromes and hypo-mineralnamehere
24. enzyme, bone, liver
25. bone, hepatobiliary
26. osteoblastic
27. balanced loss of bone & matrix
28. Bone ALP

RENAL FUNCTION AND URINALYSIS
29. Kidney
30. Congestive Heart Failure, decrease blood flow & increase blood urea
31. BUN, Creatinine, and uric acid
32. Creatinine
33. Creatinine
34. Neither absorbed nor secreted in the tubules
35. purine breakdown by the liver
36. Renal disease, hypertension (anything that slows excretion rates)
37. Increase uric acid, WBCs, ESR, and CRP
38. Hyperuricemia, alcohol, purine diet, genetics, diurectics
39. Nephrolithiasis, acute gouty nephropathy, chronic gouty nephropathy
40. Staghorn Calculus :: often becomes infected
41. water and urea
42. When a sterile collection is needed
43. Physical, chemical, and microscopic
44. color & turbidity
45. When there is blood, protein, leukocyte esterase, or nitrites
46. proteinuria :: when its low level mucous
47. dehydro, stress, exercise, fever, orthostatic, non-renal acute illness
48. increase proteins in an upright position, normal when supine
49. 4.0 grams
50. SLE
51. hematuria
52. hgB, RBCs
53. Hematuria only includes intact RBCs
54. Intravascular hemolysis
55. Pyuria
56. pyelonephritis
57. No, yeast & some (+) bacteria do not make nitrites
58. Females & diabetics
59. Uric acid stones
60. Calcium stones
61. Diabetics
62. 180 mg/dl
63. Group A beta hemolytic strep

PLASMA PROTEINS
64. Peptide hormones, von Willy, and immunoglobulins
65. More protein breakdown than synthesis
66. Electrophoretic migration :: 5
67. Cytokine IL-1 & IL-6
68. proteins that modify inflammatory response (the acute phase of an illness)
69. albumin & transferrin
70. Albumin & globulins
71. H2O level, concentration of protein
72. dehydro, gammopathy, inflammation, infection
73. dehydration
74. glomerular & Blood-brain-barrier
75. That albumin should be higher in levels than all other globulins combined
76. alpha1-antitrypsin
77. Haptoglobulin
78. Acute phase reactions & hemolysis :: inflammation & nephrotic syndrome :: intravascular hemolysis
79. Enzyme that allows for iron binding and metabolism
80. Wilson's disease (Cu is in tissues) :: inflammation & Cu toxicity
81. IDA, inflammation
82. C-reactive protein (CRP)
83. most sensitive, inflammation
84. CRP :: CRP
85. light chain, heavy chain
86. Only for 1 antigen :: monoclonal
87. IgG :: IgG
88. IgA
89. IgM
90. spike of a particular globulin clone (such as MM's Bence Jones)
91. nephrotic syndrome, blood loss, burns, inflammation, malignancy, liver disease, intake
92. Albumin should be in greater numbers than total other globulins, if not, uh oh!
93. protease, neutrophils
94. emphysema
95. c-reactive protein :: SED rate
96. polyclonal
97. general immune stimulation (inflammation, autoimmune disease)
98. Immunoelectrophoresis
99. Monoclonal gammopathy of undetermined significance :: 33%
100. IgG
101. light chain
102. Bence Jones Protein, free light chains in urine
103. Waldenstrom Macroglobulinemia
104. Bleeding, thick blood leading to headache & visual problems, and renal failure
105. CLL, bacterial infections
106. nephrotic syndrome
107. Portal hypertension (due to cirrhosis)
108. Polyclonal IgG & IgA hypergammopathy
109. Cirrhosis

HEPATIC BILIARY DISORDERS
110. Liver
111. Decrease levels :: bruising
112. plasma proteins, lipids, lipoproteins, bile acids
113. unconjugated or indirect
114. direct (because it separates)
115. Uptake (hepatocytes), conjugation (hepatocytes), excretion (bile, rate limiting)
116. albumin, cannot
117. yes, yes (because lipid soluble)
118. UDP-glucuronyl
119. increased plasma levels
120. anaerobic bacteria :: urobilinogen
121. stercobilin
122. excreted in stool (a little in urine) ; reabsorbed
123. urobilin
124. direct (water soluble)
125. skin, sclerae (conjunctiva actually), gums, nail beeds, tympanic membranes, soft palate
126. pinguecula
127. pancreatic carcinoma
128. Bilirubin
129. Prehepatic, hepatic, and post-hepatic
130. multi
131. unconjugated, normal
132. hemolytic anemia
133. elevated indirect bilirubin / urobilinogen, possible elevated direct bilirubin
134. Hepatic jaundice, uptake, conjugation, excretion (Cholestasis)
135. hepatitis
136. Gilbert's syndrome
137. Crigler-Najjar syndrome
138. Primary biliary cirrhosis (or anything that interferes w/ transport of conjugated bilirubin)
139. The bilirubin that is conjugated is returned to the plasma so levels increase
140. amber
141. Fasting alcoholic men :: unconjugated
142. genetic, unconjugated
143. Primary Biliary cirrhosis, cholestasis, liver cirrhosis
144. Common bile duct obstruction
145. bilirubin, urobilinogen
146. High direct, total, and urine bilirubin
147. Amber, steatorheaa or clay colored
148. alkaline phosphatase
149. GGTP
150. SGOT, liver damage, liver
151. SGPT
152. RBCS, heart, & kidneys :: Liver
decrease (liver makes em')
154. lasts less than 6 months
155. jt pain, myalgia, steatorrhea, bilirubinemia, uticaria
156. hepatomegaly, splenomegaly, jaundice, & fever
157. Increase AST/ALT/ALP/DirectBilirubin/UrineBilirubin
158. anti-HAV IgM (sometimes IgG)
159. infectious HAV, fecal-oral route
160. Hepatis B :: Sex & Injection
161. Active, carrier, and chronic
current infection :: past infection
163. transfusion & drugs :: 15 weeks (normal) up to 30 years :: Anti-HCV
164. RNA virus, HBV
165. Fecal oral (tropical regions)

HEPATIC BILIARY DISORDERS PART II
166. Yes : no
167. Increase ALT, AST, GGTP
168. Fatty Liver, Alcoholic hepatitis, Acute cholelithiasis
169. anorexia, nausea/vomiting, hepatomegaly, fever, splenomegaly, jaundice
170. Results in fibrous scarring and distorted architecture leading to portal hypertension
171. 40-60, sooner, (10 = 1 beer), but can vary greatly
172. splenomegaly, ascites, caput medusae, bleeding esophageal varices, hemmroids
173. Hyper-bilirubinemia, hypo-albuminemia, prolonged bleeding/PT, ↓ K/cholesterol, macrocytic anemia
174. Improper sex hormone processing
175. secondary
176. Hepatic Cancer
177. leukocytosis, elevated hematocrit/ALP/erythropoetin, Hep B antigen, alpha fetoprotein
178. cholesterol
179. Cholelithiasis
180. Booze :: Gall stones
181. Cystic duct
182. the stone can't get out, 'gallstones' can
183. nausea/vomiting, RUQ & RLQ pain, spine pain, NO FEVER
184. usually none
185. May or not be, dependent on how many stones are expelled
186. Mercedes Benz
187. Ultrasound
188. Viscous bile (usually trauma related) :: Cystic duct obstruction
189. inflammation (w/ fever) and secondary gallbladder infection
190. Diabetic
191. Palpable Gall Bladder :: Murphy's SIGN
192. arrest of inspiration during costal angle palpation
193. Mild leukocytosis, increased bilirubin/amylase/ALP/ALT/AST
194. Chole-doch-olith-iasis
195. cholangitis (life threatening) :: Charcot's triad
196. gall bladder :: biliary tree
197. fever, jaundice, and biliary pain
198. Elevated ALP/AST/ALT/Bilirubin/Amylase
199. Porcelain gallbladder (calcification of gall bladder due to excess inflammation)

PANCREAS & GASTROINTESTINAL
200. Helicobacter pylori
201. Gastrin
202. fasting endoscopy
203. coffee ground emesis
204. steatorrhea or hematochezia
205. peroxidase activity of heme (occult blood in fecus)
206. amylase, lipase, trypsin & chymotrypsin
207. acute pancreatitis :: exocrine enzyme leakage leading to self-digestion & inflammation (very bad!)
208. alcohol abuse
209. ulcers, gallstones, acute pancreatitis
210. Lipase and amylase rise (but rise is lessened the longer the problem presents)
211. amylase :: lipase
212. Grey-Turner sign
213. CA 19-9 (Carbohydrate antigen)
214. Secondary Type I Diabetes, Pancreatic calcification, steatorrhea, death
215. decrease pancreatic enzymes

ENDOCRINOLOGY
216. parafollicular cells
217. T4 (thyroxine) & T3 (triiodothyronine)
218. Iodine, thyroglobulin
219. Thyroid binding globulin
220. Graves :: Pituitary Tumor
221. TSH
222. deiodate
223. prohormone, thyroid carcinoma and hyperthyroidism
224. T3 Resin Uptake
225. Inversly related
226. Free thyoxin (they are the active players)
227. hyper, hypo
228. Increase
229. less
230. Total T4/T3, free T4/T3 (T4/T3 tends follow TBG availability)
231. good, but 15% of normal patients have them
232. Turn Off or Turn On
233. Increase T3/T4, decrease TSH
234. Toxic Goiter
235. Heat
236. Grave's opthalmopathy
237. antagonistic thyroid-stimulating immunoglobulins, TSH receptors
238. TBG (total bound T4/T3 too, but NO FREE CHANGE)
239. grave's disease
240. hyperthyroidism
241. Increase TSH, decrease T4/T3
242. Decrease TSH and T4/T3
243. insidious
244. myalgia, CTS, adhesive capsulitis, and delayed reflexes
245. becomes coarse, reckless, dry, and cold
246. increase TSH and decrease T4/T3
247. anti-TPO/Thyroglobulin antibodies resulting in hypothyroid
248. postpartum thyroiditis
249. Decrease TSH & T4/T3
250. Lithium :: Goitrogens (cabbage) :: iodine
251. Endemic
252. Serum PTH
253. Ca, PO4
254. vitamin D defiency, renal disease w/ Ca loss
255. surgery
256. Pseudohypoparathyroidism
257. Vanillylmandelic Acid (VMA), catecholamines (epinephrine)
258. Urine
259. benign/malignant chromaffin cell tumor (results in explosive personality changes)
260. DHEA, ketosteroids (by urine)
261. Cortisol
262. adenoma of pituitary gland
TUMOR MARKERS
263. some generic protein that elevates in the blood during the presence of cancer
264. PSA
265. Tumor staging, monitoring, detecting recurrence, monitor therapeutic response
266. Ectopic proteins, normal cells products in excess via tumor
267. ovarian and endometrial
268. pancreatic
269. breast
270. oncofetal antigen, first used
271. Colorectal & GI
272. Smoking
273. Alpha-fetoprotein
274. trophoblastic & germ cell tumors
275. seminal plasma

AUTOIMMUNE DISORDERS
276. highly variable
277. antibodies on cell surfaces, immune complexes, autoreactive cytotoxic cells
278. ANA
279. class :: antibodies that react with nucleic acid
280. anything found in a nucleus
281. specific autoantibody titer
282. not unique
283. IgM, IgG
284. Normochromic normocytic anemia, increased, altered
285. Joints, skin, and kidneys
286. ANA (especially dsDNA & SM)
287. RPR/VDRL (syphillus test)
288. Anemic with leukocytopenia
289. Sjogren's Syndrome :: Mostly (75%)
290. Schirmer's (the eye shimmers)
291. Collagen
292. Speckled

Don't forget to review old material for this test.