MICROORGANISM ARTHRITIS
1. Septic arthritis occurs most frequently in __________.
2. What are the most common causes of septic arthritis?
3. In septic arthritis bacterial lodge in the ________, sparking an ________ promoting _____ development.
4. How quickly does septic arthritis tend to progress?
5. What are the signs and symptoms of septic arthritis
6. Septic arthritis tends to involve _____ joints and are _______‐arthritic.
7. What are the laboratory results of septic arthritis?
8. Fungal arthritis is a rare and often a complication of __________, thus it affects the _________________.
9. Fungal arthritis is often associated with ___________ or _________________.
10. Fungal arthritis of the spine presents like ________ since it is so _________.

BONE NEOPLASIA
12. True or false: cysts are non‐neoplastic?
13. Simple /_____ /_____ bone cysts are a fluid filled cyst more common in _____ and lined with ________.
14. simple bone cysts are often secondary to ________.
15. Why does bone reabsorption occur with a simple bone cyst?
16. What is the most common site for a simple bone cyst? When?
17. Simple bone cysts tend to be located how on a bone?
18. SBC’s are ________ until fracture & may be _________.
19. Simple bone cysts are composed of __________________________
20. how do you treat a simple bone cyst?
21. What is a cyst‐like cavity filled with blood?
22. What is the gross appearance of an aneurysmal bone cyst?
23. What are the cellular components of an aneurysmal bone cyst?
24. ABC’s are ________ located and will ____________.
25. aneurysmal bone cysts in vertebrae preference the ____________.
26. In an ABC, there is a proliferation of ____________ whose pressure ____________
27. an ABC may result in _________, _________, & ____________.
28. ABC usually onset ________, and occur ________ in males and females.
29. How is an ABC treated?
30. Study the benign verse malignant charts.
31. What are the cells that can develop into primary bone neoplasms?
32. Neoplastic processes rarely cross ____ or ____, why?
BONE TUMORS
33. What type of bone tumor is always metastatic?
34. Osteoma's are densely _____ well formed _____ of _____ clinical significance.
35. What are the common location of an osteoma?
36. Multiple osteoma's with colon polyps is called ________________.
37. Osteoid osteoma tends to affect whom?
38. The osteoid osteoma tumor is referred to as a ____________, which is _____ and less than _____ in size.
39. What does a nidus contain?
40. Why is a nidus painful?
41. How does a nidus appear on a radiograph?
42. What is the classical presentation of osteoid osteoma?
43. How is osteoid osteoma treated?
44. Where osteoid osteoma is most commonly located?
45. What is the rarely occurring osteosarcoma composed of?
46. Where is a primary osteosarcoma MC?
47. What is the radiographic presentation of a primary osteosarcoma?
48. What is the gross appearance of a primary osteosarcoma?
49. Primary osteosarcoma is so aggressive that by diagnosis ___% have metastasized, of which ___% die.
50. How do you treat osteosarcoma?
51. What is a secondary osteosarcoma?
52. Where is secondary osteosarcoma most common?

CARTILAGE TUMORS
53. What is the most common bone it neoplasm and what are its three presentation?
54. Osteochondroma presents with a bony _____ and a ________________.
55. Which form of Osteochondroma is least likely to become malignant?
56. HME is more common in ____ and presents with __________ due to multiple Osteochondromas.
57. HME may affect the __________.
58. How is HME treated? Why?
59. What is the most common benign tumor of the hand and foot?
60. What type of lesion is enchondroma typically?
61. What is enchondroma?
62. What is left behind as the bone grows in enchondroma?
63. Who more commonly get enchondroma?
64. What is the multiple form of enchondroma?
65. When may chondrosarcoma metastasize and what type of cells, does it involve?
66. What percent of chondrosarcoma are primary?
67. Who most commonly gets a primary chondrosarcoma?
68. Where in the body are chondrosarcoma’s most common?
69. What is the gross tissue appearance of chondrosarcoma?
70. What are the radiographic findings of chondrosarcoma?
71. How is chondrosarcoma treated?
72. Where does chondrosarcoma tend to metastasize?
73. What is the five-year survival rate of chondrosarcoma?
74. Why is drug and radiation therapy poorly effective for chondrosarcoma?

**FIBROUS TUMORS**
75. Fibrous dysplasia is a _____ lesion, commonly of the _____, _____, _____, & _____ bones.
76. Fibrous dysplasia contains what cellular components?
77. Who gets fibrous dysplasia? What percent become malignant?
78. Which is the most common form of fibrous dysplasia?
79. How does monostotic fibrous dysplasia clinically present?
80. What is the clinical presentation of polyostotic fibrous dysplasia?
81. What are the radiographic findings of fibrous dysplasia?
82. Fibrous cortical defects, a.k.a. _________, is common and effects ____________.
83. True or false: fibrous cortical defects is not a neoplasm.
84. Fibrous cortical defect tends to be _____ cm lesions located in the _____, _____, or _______.
85. What is the cellular appearance of a fibrous cortical defect?
86. In fibrous cortical defect, there is no new ____________, rather ____________.
87. Fibrous cortical defects clinically present as ________, and rarely results in a ____________.
88. How is fibrous cortical defects treated?
89. Fibrosarcoma is composed of what?
90. Fibrosarcoma develops ________ overtime, most commonly in ____ (whom) ____.
91. What are the signs/symptoms of fibrosarcoma?
92. How is fibrosarcoma treated and what happens if it is left untreated?

**BLOOD TUMORS**
93. What are the blood tumors of bone?
94. The uncommon giant cell tumor involves ____ cells, of ____________ origin.
95. Who gets benign giant cell tumors? Malignant giant cell tumors?
96. Giant cell tumors arise in the _______ and are _______ lesions extending into the epiphysis.
97. What is the cellular appearance of a giant cell tumor?
98. Giant cell tumors tend to be (benign/malignant).
99. What are the signs and symptoms of giant cell tumor?
100. What is the radiographic appearance of giant cell tumor?
101. How are giant cell tumors treated?
102. Multiple myeloma is a malignant proliferation of _________ that infiltrate __________.
103. Describe the lesions associated with multiple myeloma?
104. Who commonly gets multiple myeloma?
105. What are the clinical findings of multiple myeloma?
106. What is the pain related symptoms of multiple myeloma?
107. What are the non-pain related symptoms of multiple myeloma?
108. Multiple myeloma commonly occurs where?
109. What is the etiology of multiple myeloma?
110. How is multiple myeloma treated? Thus, what is the survival rate?

MISC PATHOLOGIES SIMILAR TO BONE
111. What pathologies may be confused with a primary bone tumor?
112. What is hemangioma?
113. Hemangiomas are generally clinically ________, and presents with ___________________.
114. In an x-ray, a hemangioma will have a ______________ appearance of vertebral bodies.
115. Ewing’s sarcoma is classically described as having ____________________.
116. Who MC gets Ewing’s sarcoma?
117. A Ewing’s sarcoma tumor is ______ necrotic and the disease may be ________.
118. Where does Ewings sarcoma like to occur?
119. In an x-ray, Ewings sarcoma has a __________ appearance.
120. How is Ewing sarcoma treated? What is the survival rate?
121. Extra osseous Ewing sarcoma has identical pathologies and descriptions of __________, but has no __________.

SECONDARY BONE TUMORS
122. _____% of bone tumors are metastatic in origin.
123. Malignant bone tumors tend to come from what locations?
124. __________ spread is metastatic disease’s favorite method.
125. Most metastatic tumors in bone of females comes from where? In males?
126. What is the most common bone effected by metastatic disease?
127. Metastatic disease tends to occur when?
128. What is the clinical presentation of metastatic disease?
129. What is the quality of pain and metastatic disease?
130. What is the radiographic appearance of metastatic disease?
131. Why may a bone become osteoblastic in metastatic disease?
132. How would the blood test appear with metastatic disease?
133. What are the characteristics of a secondary bone tumor?
134. How is metastatic disease treated? What is the prognosis?

**JOINT BASICS**
135. Ligaments are composed of _______ that allow for _______.
136. The synovial membrane lines __________ except the ___________.
137. Why is the synovium not a true membrane?
138. Type A cells are ________.
139. Type B cells are ________ and produce ____________.
140. What increases surface area of the synovium?
141. What is Sub-synovial tissue?
142. Where is the synovium in the knee?
143. Synovial fluid is a ____________.
144. Synovial fluids should not contain__________ and should appear ____________.
145. What allows for the proper viscosity of synovial fluid?
146. What is the importance of viscosity of synovial fluid?
147. Why is articular cartilage limited to 6mm thick?
148. Articular cartilage changes in thickness with stress/exercise due to __________, allowing for __________. 
149. Which zones of cartilage are radio dense?
150. Where is the blueline/tide mark?
151. The blue line is the interface between what?
152. When do chondrocytes replicate and migrate above the tide mark? What about below?
153. 70-80% of articular cartilage waits is comprised of ______, the rest being _____ & _______.
154. Proteoglycans make up the _______ and the __________.
155. What is Hilton’s Law?
156. Encapsulated endings respond to ___________ stimuli, such as ____ & ____.
157. The Golgi tendon organs respond to _______ at the ______________.
158. Pacinian corpuscles respond to ____________________.
159. Free nerve endings respond to _______.
160. What is a bursae? When are they developed?
161. Tendon sheaths are ______________. What are the gaps called?
162. Tendon sheaths have a ________ lining both layers.
NON-INFLAMMATORY JOINT DISEASE

163. Degenerative diseases are actually ___________ diseases.
164. What is cartilage fibrillation?
165. What are the general characteristics of non-inflammatory joint diseases?
166. DJD, a.k.a. ___________, is a reactive pattern of joint tissues to ________________.
167. DJD most commonly affects what types of joint?
168. Who has DJD? Where is it most often found?
169. Whom most commonly gets moderate or severe DJD?
170. Who has DJD more than anyone else? (RACE)
171. What can cause cartilaginous damage and thus DJD?
172. Gravity leads to what type of osteoarthritis? Trauma?
173. What factors promote DJD?
174. What makes cartilage genetically poor?
175. How does stiffening of subchondral bone occur in why will it promote DJD?
176. In DJD there is a loss of __________, and _____ & _________ of the cartilage.
177. In DJD, what is found around the chondrocytes?
178. The cartilage repair of DJD is composed of ________________.
179. What is a subchondral cyst?
180. When does fibrocartilage formation began?
181. What would the blood test for DJD look like?
182. In DJD, where is new bone formed?
183. Osteophytes are an attempt to _____ and are developmentally guided by _______________.
184. What covers the surface of osteophytes?
185. Vertebral osteophytes result from ________________.
186. Why are the facets commonly severely affected in vertebral DJD?
187. What is eburnation?
188. What are the soft tissue changes of subchondral cyst? What is it also known as?
189. What is the clinical presentation of DJD?
190. What common orientation is seen in the foot of a DJD patient?
191. What is a common secondary DJD process?
192. What are the radiographic findings of DJD?
193. Except in severe___, ___, or ___ DJD, degeneration does not correlate with the presence of symptoms.
194. What is a vacuum sign?
195. What is the “most overworked and imprecise diagnosis of the knee” associated w/ anterior knee pain?
196. CMP has been used interchangeably w/ ____________ of the knee.
197. What are the cartilage changes in chondromalacia patella?
198. Softening of cartilage (is / is not) symptomatic?
199. What are the causal theories of chondromalacia patella?
200. CMP occurs between __ - __ years, equally between men & females, and has an ________ onset.
201. Is chondromalacia patella a normal aging process?
202. Chondromalacia patella involves what signs/symptoms?
203. The symptoms of CMP are associated with ______, ______, ______, ______, & ______.
204. What incidents are statistically associated with CMP?
205. Too much or too little pressure leads to ______ & ______.
206. What is the best way to visualize CMP?
207. How may chondromalacia patella be treated?
208. What is destructive articular disease secondary to neural damage?
209. In neuropathic arthropathy, the patient experience _____ degeneration resulting in ____________.
210. What is the etiology of neuropathic arthropathy?
211. What may lead to acquired neuropathic arthropathy?
212. What are the clinical features of neuropathic arthropathy?
213. How quickly may neuropathic arthropathy form?
214. What is the radiographic appearance of neuropathic arthropathy?
215. What are the 6 D's of neuropathic arthropathy?

INFLAMMATORY JOINT DISEASE
216. What are the characteristics of an inflammatory joint disease?
217. Rheumatoid arthritis is a ________ disease that affects the ____________________.
218. Rheumatoid arthritis is not ______; it is a _____ synovitis leading to destruction of ______ & ______ of jts.
219. Who most commonly gets RA?
220. What is the etiology of rheumatoid arthritis?
221. RA is highly (unpredict/predictable), although ___% have a ___ onset w/ the greatest damage occurring in ______.
222. What joints are most commonly involved in RA? Where in the spine may it be found?
223. RA begins as ________ inflammation.
224. What cells deposit in the areolar tissue of RA?
225. In RA, what occurs w/ the synovium?
226. In RA, within the joint space there is ________ & ________.
227. The inflammatory cell's PGE2 stimulates ________, thus leading to ________ & ________.
228. What is an inflamed & hypertrophied synovium?
229. What does a pannus do?
230. What is the immune response associated w/ RA?
231. At the end of RA, tissue is organized into ______ leading to ______, and possibly eventually ________.
232. What are the lab findings of RA?
233. Why is a bone scan a poor method of detecting RA?
234. In RA, there tends to be ______ deviation of the wrist, and ______ deviation of the fingers.
235. What % of RA patients are seropositive? What % of the normal population?
236. What is the basic clinical presentation of RA?
237. What is seen in severe RA?
238. What is a rheumatoid nodule?
239. What are the radiographic findings of RA?
240. Juvenile RA, aka_____, occurs in people under _____, and appear identical to adult RA with the exception of ____.
241. What may Juvenile RA do to the growth plate?
242. Juvenile RA may be _____, _____, or _____ arthritis.
243. What is the most commonly involved joint of juvenile RA? What may also occur in JRA?
244. What percent of JRA patients undergo complete remission?