VISUAL SYSTEM

1. The image on the retina is _____ and _____.
2. Upper visual field information travels to the _____ in the _____ lobe in the _____ gyrus.
3. Lower visual field information travels to the _____ lobe in the _____ gyrus.
4. Both visual reflexes synapse with what nucleus bilaterally?
5. Both visual reflexes will synapse with what important nuclei?
6. The light reflex enters the _____ after traveling through the optic tract.
7. What are high velocity eye movements that orient the eyes toward the stimulus?
8. Describe the accommodation reflex pathway between the optic tract and pretectal nucleus.
9. Saccadic movements use what type of information?
10. The saccadic movements utilizes what structure and brain area?
11. The sup. colliculus receives info about _____ and is concerned with _____ and _____.
12. The frontal eye field receives info from the _____ and is concerned with _____ and _____.
13. What nerves are involved in the corneal reflex and what does each contribute to it?
14. What is the white wall of the eye? What is the clear continuation of it?
15. What is the conjunctiva?
16. Why does it make sense that the macula is responsible for central vision & sharp detail?
17. What is the fovea?
18. What are the three neuron layers of the retina from superficial to deepest?
19. What is the purpose of horizontal and amacrine cells?
20. Rods are __ sensitive to light, have ___ photopigment of ___ type to capture ____ light.
21. Although they have poor acuity, rods are great for _____ vision.
22. When do rods saturate?
23. What photoreceptors are present in the fovea?
24. What types of photopigments do the cones have?
25. Describe the peripheral retina.
26. Since the dark membrane potential of the retina is _____, _____ is produced in the dark.
27. What keeps the photoreceptors at -40mV?
28. What absorbs light and electromagnetic radiation?
29. What is the Young-Helmholtz trichromacy theory?
30. What is Rhodopsin?
31. What does bleaching mean?
32. Closing of Na^+ channels results in _____ resulting in (increased/reduced) glutamate release.
33. What is the effector enzyme that breaks down cGMP?
34. What is the cascade of events leading to hyperpolarization, thus decreased glutamate release?
35. During dark adaptation, _____ regenerates in the rods with the use of _____.

VISION OF BIPOLAR, GANGLION, NUCLEI, & CORTEX

36. What is the area of the retina when stimulated by L changes the cell's membrane potential?
37. How tdo surrounding photoreceptors send information to the bipolar cell?
38. The receptive field centers and surrounds are _____ to each other.
39. What receptors on ON bipolar cells cause depolarization?
40. What causes OFF bipolar cells to depolarize?
41. In what situation do OFF bipolar cells depolarize?
42. The center & surround receptive fields may _____ resulting in a _____ in polarization.
43. Ganglion cells are mainly responsive to _____.
44. Like bipolar cells, ganglion cells have _____ receptive fields.
45. What are the types of ganglion cells?
46. Describe the magnocellular cells.
47. Parvocellular cells are responsible for _____ and _____.
48. P-cells have ____ receptive fields.
49. What are the two P-cell opponent cells and what they are sensitive too.
50. The lateral geniculate nucleus is numbered from _____ to _____.
51. What layers contain M cells?
52. What layers receive ipsilateral information?
53. What is the primary visual cortex?
54. What do the Histological layers I & II of the visual cortex receive?
55. What does layer III receive and where does it disseminate?
56. What does layer IVB receive and where does it disseminate?
57. What does layer V connect to?
58. What does layer VI connect to?
59. The IVC layer (α & β), is organized in _____.
60. V2 is the _____ cortex, areas _____ & _____.
61. Refer to figure III for how P type and M type fibers are dealt with.

CEREBROVASCULAR ACCIDENT

62. The brain receives ___% of cardiac output and ___% of oxygen used in the body.
63. For auto regulation, why do the cerebral arteries dilate?
64. What is a drop in arteriole CO_2 called?
65. What is inadequate blood supply? What is it called if it results in cell death?
66. What is inadequate blood supply?
67. What is the most common class of stroke and what is it due to?
68. What is the rarest cause of stroke and how does it cause a stroke?

69. What are the three types of Ischemic stroke (from most to least common)?
70. What is arterial stenosis?
71. How does a thrombus form?
72. An injured arteriole fails to produce enough NO, which is critical for maintaining _____.
73. Why when there is a lack of NO, arteries cannot contract properly?
74. What is an emboli?
75. Describe the significance of atrial fibrillation as it pertains to Embolic strokes.
76. Emboli are not uncommon with _____, _____, or _____ disorders.
77. What are the rare sources emboli?
78. What are lacunar strokes and their symptoms?
79. What percent of thrombotic strokes are actually lacunar strokes?
80. Lacunar strokes are the most common subtype of stroke in _____ people.
81. In a Hemorrhagic stroke, what is broken?
82. What are the subtypes of Hemorrhagic stroke (From most common to least)?
83. _____ glutamate receptors can let excess amounts of ___ into the brain leading to infraction.
84. What stroke victims often are unable to recognize their symptoms?
85. What are parenchymal strokes the result of?
86. Who is at an elevated risk of parenchymal stroke?
87. What occurs in a Subarachnoid hemorrhagic stroke?
88. What is a Arteriovenous malformation?
89. What can cause excessive hypotension?

STROKE RISK FACTORS & SYMPTOMS

90. What age group is at the highest risk for stroke?
91. Which sex is at the highest risk of death by ischemic stroke?
92. What ethnic groups are at high risk for stroke?
93. A. Americans are ____ more likely to have a stoke, and ____ more likely to die than whites.
94. What area of the country has the highest risk for stroke?
95. _____ contributes to 70% of all strokes.
96. The wider the spread between _____ and _____ the greater the risk for stoke.
97. Smoking increases the risk for _____ and _____ stroke by 2.5 times.
98. What sugar related syndromes are stroke risks?
99. What form of obesity has the highest stroke risk?
100. What body lipid seems important for preventing strokes?
101. Excessive alcohol is associated with _____ and _____ strokes.
102. Seven or less drinks of alcohol a week can lower your risk for which type of stroke?

103. Who does 3+ cups of coffee a week endanger?
104. Which drugs are associated with stroke in younger individuals?
105. What mental and emotional factors can effect stroke risk?
106. For younger individuals, what factors can raise the risk of stroke associated with migraines?
107. What may be the second greatest risk factor for stroke and what does it occur along side?
108. In general how does an infection increase the risk for stroke?
109. What are three specific infections that are related to stroke?
110. What may cause a stroke in children?

STROKE SYNDROMES

111. What is a focal loss of neurological function that usually resolves within 24 hours?
112. What is the major indicator of the source of a major ischemic stroke?
113. Symptoms of TIAs in the Basiliar artery are usually _____.
114. When a _____ causes the stroke, the onset is usually gradual. What if it's a fast onset?
115. What are the suddenly evolving symptoms of cerebral & parenchymal hemorrhagic strokes?
116. What are the symptoms of the 'leaky' vessels prior to a subarachnoid hemorrhagic stoke?
117. How do silent brain infarctions differ from lacunar strokes?
118. What is a syncope?
119. A syncope inducing ischemia can be due to _____, _____, _____, and _____.
120. What is hemiplegia? Paraplegia?
121. The middle cerebral artery supplies nearly all the lateral brain except what gyri?
122. What structures are coved by the Posterior Cerebral Artery?
123. What structures of the medial brain are covered by the anterior cerebral artery?
124. ICA infarctions tend to induce the territories of which arteries?
125. What are the visual symptoms of an ICA infarction?
126. In an ICA infarction, what occurs if the dominant hemisphere is affected?
127. In an ICA infarction, what occurs in the non-dominant hemisphere is affected in the parietal lobe?
128. _____ paralysis and sensory loss occurs in a ICA infarction.
129. _____ paralysis and sensory loss of the _____ occurs in a Anterior cerebral infarction.
130. What are the mental symptoms of anterior cerebral infarction & their locations?
131. The internal capsule contains what fibers and tracts?
132. What are the symptoms of an anterior choroidal infarction and what area is lesioned?
133. What are the symptoms of a distal occlusion of the Posterior Cerebral and what area it affects?
134. What are the symptoms of a distal bilat. occlusion of the Pos. Cerebral and what area it affects?
135. What are the symptoms of a prox. bilat. occlusion of the pos. Cerebral and what area it affects?
136. What is alexia?

137. What is anton's syndrome?
138. What is apraxia and what occlusion is it related to?
139. What are the visual symptoms related to a middle cerebral infarction? Name the effected areas.
140. The spastic paralysis resulting from a Middle cerebral infarction is found where?
141. The acute conjugate gaze of a middle cerebral infarction occurs in what direction?
142. What are the symptoms of the prox. Posterior cerebral infarction?
143. Why does a large hemorrhage within the brain stem result in coma or death?
144. What is locked in syndrome?
145. What arteries are involved in Medial syndromes of the Medulla & Pons?
146. In a medial syndrome, where is the paralysis & DS loss and what structures are affected?
147. What specific issues would occur with an inferior pons pontine infarction?
148. What specific issues would occur with a superior pons pontine infarction?
149. What specific symptom occurs with a medulla vertebral paramedian ant. Spinal infaction?
150. There are seven common symptoms with lateral infarctions in the medulla (PICA) & Pons (AICA).
    a. ___ loss of P & T from the body. Due to destruction of the _____ located in the _____.
    b. ___ loss of P & T from the face. Due to destruction of the _____ located in the _____.
    c. ___ loss of touch from the face. Due to destruction of the _____ located in the _____.
    d. _____ due to destruction of the vestibular nuclei
    e. Cerebellar symptoms, such as ____, ____, ____, ____, ____, and ____.
    f. What occurs if the reticular formation is lesioned?
151. What is Horner's Syndrome? What is it caused by?
152. What is Wallenberg syndrome?
153. What are the lower pons independent symptoms?
154. What are the midpons independent symptoms?
155. What is a Dorsal midbrain syndrome also known and what often causes it?
156. What are the symptoms of a dorsal midbrain syndrome. What specific structures are lesioned?
157. What is a Ventral midbrain syndrome also known as? Central midbrain syndrome?
158. What are the symptoms of a ventral midbrain syndrome. What specific structures are lesioned?
159. What are the symptoms of oculomotor palsy?
160. What are the symptoms of a central midbrain syndrome.
161. A combination of the ventral and central midbrain syndromes is called _____.

AUTONOMIC NERVOUS SYSTEM

162. Since autonomics have no _____, neurotransmitters diffuse _____ before reaching their targets.
163. Preganglionic autonomic terminals release _____.
164. Sweat glands are _____.

165. What are the neuropeptides that function directly on tissue or have a modulator role?
166. Post-gang sympathetic terminals release ___ that are received by _____ receptors.
167. Distal blood supply is often _____ driven.
168. Where are the pre-gang sympathetic cells located?
169. Preganglionic sympathetic fibers exit through the _____, form the ____, and enter the _____.
170. At what level do preganglionic sympathetic fibers synapse w/ the sympathetic chain ganglion?
171. From the chain ganglion, how do post-gang sympathetic fibers reach their target?
172. What do post-gang sympathetic fibers innervate?
173. Lesion of the sup. Cervical ganglion or reticular formation of the medulla results in _____.
174. The cervical ganglion receives its sympathetic fibers from what levels?
175. The sup. Cervical ganglion supplies the _____ of the head.
176. The middle and inferior cervical ganglion supply the _____ of the _____ and _____.
177. The cervical ganglion have _____ branches, no _____.
178. Pre-gang sympathetic fibers that don't synapse in the ganglia form the _____ nerve.
179. The splanchnic nerves synapse with the _____. What are the three divisions of it?
180. What do the post-gang fibers of the prevertebral ganglion innervate?
181. The fibers of the splanchnic n. that bypass the prevertebral gang innervate what?
182. Where are preganglionic parasympathetic cells found?
183. Describe the route of parasympathetic via CN III.
184. Describe the route of parasympathetic via CN VII.
185. Describe the route of parasympathetic via CN IX.
186. Describe the route of parasympathetic via CN X.
187. Describe the route of parasympathetic via the S2-S4 intermediolateral column.
188. The enteric nervous system controls the function of the _____, _____, and _____.
189. What do enteric sensory neurons respond to?
190. What do enteric motor neurons innervate?
191. Where is the myenteric (aka _____) plexus located?
192. Where is the submucosal (aka _____) plexus located?
193. What three nerves converge at the solitary nucleus?
194. The glossopharyngeal nerve conveys info from _____.
195. The solitary n. projects where for reflexive autonomic function?
196. The solitary n. projects to the _____ to regulate breathing, BP, and HR.
197. The rest of the solitary projections go to the _____, and from there the ____, ____, & ____.
198. Which type of fiber is more tissue specific, sympathetic or para?
199. Somatic dorsal rami are concerned with the _____.
200. Somatic ventral rami are concerned with the _____.