Advanced AMG EOC Review 2014-2015

1. What is the water cycle?
2. What are the different reservoirs holding Earth's water, from largest to smallest?
3. What is the process called when plants release water into the atmosphere?
4. What is the major cause of floods in the spring?
5. How do communities attempt to keep a river within its channel during a flood?
6. What zone is groundwater found in?
7. Where is most of our drinking water obtained from?
8. How does a cavern form?
9. In what kind of sedimentary rock are most caverns formed?
10. What are features of karst topography?
11. What are the five parts to the definition of a mineral?
12. What are the four main processes of mineral formation?
13. What is the process called when a mineral forms from magma?
14. What are the 6 categories of mineral groups? What elements make up the 6 categories?
15. Describe the 6 characteristics of a mineral.
16. What is the energy that drives the formation of Sedimentary rocks?
17. What is the energy that drives the formation of Igneous and Metamorphic rocks?
18. How are igneous rocks classified?
19. What is the main difference between intrusive and extrusive igneous rocks?
20. What is the 5 step process of changing an igneous rock into a sedimentary rock?
21. How does a foliated metamorphic rock form?
22. In what kind of rocks are fossils found?
23. What is the Principle of Uniformitarianism?
24. What is relative dating?
25. What is the Principle of Cross-Cutting Relationships?
26. What is radiometric dating?
27. What is the Law of Superposition?
28. What are the three types of unconformities?
29. What is the definition of a fossil?
30. What is trace fossil?
31. What two things are important for an organism to become a fossil?
32. What is radioactivity?
33. What is radiometric dating?
34. How old do most scientists say the earth is?
35. What are the divisions in the geologic time scale and their order, from longest to shortest?
36. What are the 4 components that make up soil?
37. What factor has the greatest effect on soil formation?
38. What determines the texture of a soil?
39. Soil texture is grouped into 3 categories. What are they? (Remember your soil triangle)
40. Review how to use the soil triangle.
41. Describe a soil profile from the horizon (or layer) at the surface to the deepest layer.
42. What are the four spheres?
43. What is longitude? What are its units?
44. What is latitude? What are its units?
45. What are advantages and disadvantages of Mercator projection maps?
46. What are advantages and disadvantages of conic projection maps?
47. What are advantages and disadvantages of gnomonic (planar) projection maps?

48. What does a topographic map show?
49. What is a scientific hypothesis?
50. What is a scientific theory?
51. How did Aristotle know that the earth was round?
52. Know the geocentric model of the solar system and which astronomers thought that this was correct.
53. Know the heliocentric model of the solar system and which astronomers thought that this was correct.
54. What is retrograde motion?
55. Who proposed the 3 laws of planetary motion? What are the three laws?
56. Know the three motions or movements of the earth.
57. Be able to explain why Earth has seasons (two reasons).
58. Be able to correctly give the dates of solstices and equinoxes in both Northern and Southern Hemispheres.
59. Know the phases of the moon.
60. How did the moon form?
61. Describe how a solar eclipse occurs.
62. Describe how a lunar eclipse occurs.
63. What universal law did Newton propose that explains the motion of planets and moons?
64. What is the nebular hypothesis for the formation of the solar system?
65. Know the terrestrial planets' sizes and atmospheres.
66. Know the Jovian planets' sizes and atmospheres.
67. Know the most important features on the planets.
68. Know the major moons of the solar system (which planet, special features).
69. Where are asteroids located?
70. Know the difference among meteors, meteoroids, and meteorites.
71. Know the parts of a comet.
72. Why are infrared and x-ray telescopes placed in space?
73. How does a reflecting telescope work?
74. How does a refracting telescope work?
75. How can astronomers know the composition of distant stars?
76. Describe how the Doppler effect allows scientists to know how stars and galaxies are moving relative to Earth.
77. What space exploration program landed humans on the moon?
78. What was the first manmade satellite in space and who launched it?
79. Which space mission visited the outer planets and has left the solar system?
80. What space mission is currently at Saturn?
81. What are the six layers of the sun?
82. What is the source of the sun's energy?
83. What is a sunspot?
84. What is the solar wind?
85. What is a coronal mass ejection and what effect does it have on Earth's power grid?
86. Describe how solar flares and coronal mass ejections cause auroras.
87. When and from what is a new star born?
88. What are the three types of galaxies?
89. Which classification is the largest percentage of galaxies?

90. How do we know the universe is expanding?
91. What evidence supports the Big Bang Theory?
92. In what galaxy is our solar system located?
93. Where is our sun located in this galaxy?
94. What is the stellar evolution (life cycle) for low mass stars?
95. What is the stellar evolution (life cycle) for massive stars?
96. What is the mnemonic for stars' spectral classes, colors, and temperatures, from hottest to coolest?
97. Be able to interpret an H-R (Hertzsprung-Russell) diagram and identify stars at different stages.
98. What is a neutron star?
99. What is a pulsar?
100. What is a black hole?
101. What is a fault?
102. What is an earthquake focus?
103. What is an earthquake epicenter?
104. What causes earthquakes?
105. What is a foreshock?
106. What is an aftershock?
107. What are the four types of seismic waves?
108. Which type of seismic wave is the fastest?
109. Which type of seismic wave is the most destructive?
110. How do scientists determine where an earthquake has occurred?
111. Which is the most commonly used scale for measuring earthquakes?
112. What is the instrument that records seismic waves?
113. What kind of ground is the safest place to build your house in an earthquake zone?
114. What is liquefaction?
115. What is a tsunami?
116. What is the hypothesis of Continental Drift?
117. What is the supercontinent proposed by Alfred Wegener?
118. What are four pieces of evidence that support Continental Drift?
119. What are four pieces of evidence that support the theory of Plate Tectonics?
120. Why was Alfred Wegener's hypothesis of Continental Drift rejected?
121. What is the theory of Plate Tectonics?
122. What is a tectonic plate?
123. What are the three types of plate boundaries?
124. What are the three kinds of convergent boundaries?
125. What kind of landforms are produced at these boundaries? Give an example of each.
126. What is a hotspot?
127. What evidence supports that the Hawai'ian Islands are formed by a hotspot?
128. What are the mechanisms that move tectonic plates?
129. Name an example of transform fault boundary.
130. Name an example of continental divergent boundary.
131. Where is new ocean crust formed?
132. What is the Mid-Atlantic Ridge?
133. What are the five layers of Earth based on composition?
134. What are the six layers of Earth based on physical properties?
135. How do scientists know about the interior of the Earth without having been there?
136. Define asthenosphere.
137. Define lithosphere.

138. What is the Moho?
139. What are the three types of magma and what are their three main characteristics?
140. Which kind of magma produces the most explosive volcanoes?
141. What is pyroclastic material?
142. What are the three types of volcanoes?
143. What and where is the “ring of fire”?
144. What kind of setting formed the Yellowstone National Park?
145. Define deformation as it applies to bodies of rock.
146. What the three types of stress in bodies of rocks?
147. What kind of stress causes folding in bodies of rock?
148. What kind of stress causes fault-block mountains to form?
149. Define the three types of faults and the type of force that causes each.
150. What is orogenesis?
151. What is a horst?
152. What is a graben?
153. What is continental accretion?
154. What types of mountains form at convergent plate boundaries?
155. What type of mountains form at divergent boundaries?
156. What gases make up our atmosphere and in what percentages?
157. What are the four layers of the atmosphere, their heights and temperature profiles?
158. How and where do ozone molecules form in the atmosphere?
159. How are temperature and heat related?
160. Describe the three major mechanisms of heat transfer.
161. What three results can happen when solar radiation strikes an object?
162. How do scattering and reflection differ?
163. What are temperature controls? Be able to describe 5 factors besides latitude that exert an influence on temperature.
164. How does the heating of land and water differ?
165. What is albedo?
166. What is the Greenhouse Effect?
167. Which gases contribute to the Greenhouse Effect?
168. How does the Greenhouse Effect keep our planet habitable?
169. Why do many clouds reflect a significant amount of sunlight back to space?
170. Which gas is most important for understanding atmospheric processes?
171. What happens during a change of state? Be able to name the changes of state water undergoes.
172. What is latent heat?
173. How do warm and cold air compare in their ability to hold water vapor?
174. What is relative humidity? What two ways can the relative humidity of air be changed?
175. What does it mean for air to be saturated?
176. What is the dew point?
177. What instrument did we use to measure humidity?
178. What are temperature changes called that are not the result of adding or subtracting heat?
179. What happens when air is allowed to expand? or contract?
180. What are the dry and wet adiabatic lapse rates?
181. List four mechanisms that can cause air to rise.
182. Contrast the movements of stable and unstable air.
183. Describe a temperature inversion and how it influences air quality.
184. What purpose do condensation nuclei serve? Give 3 examples of condensation nuclei.
185. How are clouds classified (book gives 2, I gave you a third)
186. What are the three main forms or shapes of clouds?

187. What are the three levels of cloud heights and what types of clouds are associated with them?
188. What is the one type of cloud that spans all three heights?
189. Describe the difference between water vapor and clouds, and clouds and precipitation.
190. What precipitation process operates in cold clouds?
191. What precipitation process operates in warm clouds?
192. What are the five types of precipitation?
193. What is air pressure and how is it exerted on objects?
194. What is an instrument that measures air pressure?
195. What causes wind (both the ultimate source and in terms of higher and lower pressure)?
196. What three factors combine to control wind?
197. How does the spacing of isobars on a weather map indicate wind speed?
198. How does the Coriolis effect deflect wind in the Northern and Southern Hemispheres?
199. How and where does friction affect wind speed and direction?
200. What are jet streams? At what altitude and latitude are they located? What direction do they flow?
201. How do winds blow around high and low pressure centers in the Northern Hemisphere? Around high and low pressure centers in the Southern Hemisphere?
202. What are the air pressure patterns within cyclones and anticyclones?
203. What are two types of local winds and how do they differ during the day and at night?
204. What instrument measures wind speed? Wind direction?
205. What is a prevailing wind?
206. What is an El Niño event? What is a La Niña event? What effects do they have on weather?
207. What is an air mass? In what two ways are air masses classified?
208. What is a cP air mass and where did it form? An mT air mass and where?
209. What is a front? What are the four types of fronts and how are they shown on weather maps?
210. What weather patterns are associated with each type of front?
211. What is a mid-latitude cyclone and which types of fronts are associated with it?
212. What is a thunderstorm? What stages do thunderstorms go through? What weather conditions do they produce?
213. What is a tornado? With what type of thunderstorm are most tornadoes associated?
214. Where and when do most tornadoes form?
215. What damage scale is used to measure tornado intensity?
216. What is a hurricane? Name the major structures within a hurricane.
217. How and where do hurricanes form? What fuels hurricanes?
218. What is a storm surge?
219. What happens to a hurricane's strength and wind speed when it passes over land?
220. What scale is used to measure a hurricane's intensity?
221. What is the difference between weather and climate?
222. How do latitude and elevation affect climate? Mountain ranges? Large bodies of water?
223. Where are the tropical zones? The temperate zones? The polar zones?
224. The Köppen climate classification system is based on which two average measurements?
225. What is a humid tropical climate? A humid mid-latitude climate (mild and severe winters)?
226. What is a dry climate? A polar climate?
227. How do highland climates compare with nearby lowlands? What do they share?
228. What are four <u>natural</u> processes that change climate?
229. How have human activities in the last 200 years influenced the greenhouse effect?
230. What is global warming? What are some of the possible effects of global warming?
231. Which climate zone will experience the largest effects of global warming?