

❖ Study Guide for the Final Exam

- ❖ The final exam is cumulative. There will be 25 multiple-choice questions (1 point each), 15 definitions (2 points each), and 3 short-answer questions (15 points each). If you have been attending all classes and have taken good notes, then you will be quite OK. Pay attention to the concepts. Understand the important terms and illustrations in each chapter. Major emphasis will be on comparative study of the earth's continents, oceans, mineral resources, climate, plants, and animals during various geologic times. **Review the last three study guides.**

Here are some hints and ideas that you should know for the test:

❖ Precambrian History:

- ** Precambrian (87% of geologic time) = Archean (45%) + Proterozoic (42%) Eons.
- ** Know the major characteristics of Archean Eon.
- ** How was the plate tectonics different from today's plate tectonics?
- ** Know the difference between shield, platform, craton, and mobile belt.
- ** Know the most common types of rocks (remember our last field trip) found during Archean time.
- ** What were the most common atmospheric gases?
- ** How does Proterozoic Eon differ from Archean Eon? What type of rocks found during Proterozoic time?
- ** What is ophiolite? Banded iron formation?
- ** Know the names of the continents that existed during Proterozoic time.
- ** What types of organisms existed during Proterozoic time?
- ** What is the difference between prokaryotes and eukaryotes? Know examples of these organisms.

Paleozoic History:

- ** Paleozoic(7% of time) = Cambrian, Ordovician, Silurian, Devonian, Mississippian, Pennsylvanian, and Permian.
- ** Know the names of 6 continents, 4 transgressions, and 4 mountain building episodes during Paleozoic time.
- ** Know the history of the Appalachian, and the ways in which this history relates to Geologic Provinces of PA.
- ** Know the paleogeography (i.e. locations with respect to equator and distributions of lands and oceans).
- ** What types of data (info) do you need to reconstruct paleogeographic map of a place?
- ** What is an epeiric sea? What role did epeiric seas play in shaping the landscape of North America?
- ** What is cyclothem? When and how did they form? What type of rocks were deposited in PA by those cyclothem?
- ** When did the Pangaea form? What impact did Pangaea have on ocean circulation, climate, and evolution of organisms?
- ** Know the most common groups of organisms (both plants and animals) that lived

during Paleozoic time.

**** What is Cambrian explosion? Why is Burgess shale so important in the history of Paleozoic life?**

**** Know the significance of development of shelly fauna, amniote eggs, and seed-bearing plants.**

**** Know the major mineral resources from Paleozoic time, including those found in PA.**

**** What is the P/T extinction? What are some plausible causes and evidence to support those causes of that extinction?**

Mesozoic History:

**** Mesozoic (4% of time) Era = Triassic, Jurassic and Cretaceous periods.**

**** Mesozoic started after P/T mass extinction and ended with K/T mass extinction/ What are those?**

**** Break up of Pangaea and the impact it had on land, ocean, climate, and organisms are the major story during the Mesozoic time. Know the steps involved in break up of the Pangaea.**

**** What are interior seas? How did the landscape of the east coast and gulf coast look like during the Mesozoic time? What evidence do you have to prove this?**

**** Know the sequence of geologic events and associated rocks deposited in the Newark-Gettysburg rift basin.**

**** Know the evolution of the North American Cordilleran Mountains out west. Why are those mountains so wide and sharp edged?**

**** What are basins and ranges? How did they form? What types of rocks are you likely to find in the basin and range areas?**

**** What kinds of plants and animals (other than dinosaurs) existed during the Mesozoic time?**

**** Know distinguishing features of two types of dinosaurs (saurichia vs. ornithochia).**

**** What are pterosaurs, ichthyosaurs, and plesiosaurs?**

**** What are some plausible causes that thought to be responsible for the extinction of dinosaurs?**

**** What are some common mineral resources from the Mesozoic Era?**

Cenozoic History:

**** Cenozoic (<2% of time) = Tertiary + Quaternary periods, which are further subdivided into epochs:**

**** Tertiary = Paleocene, Eocene, Oligocene, Miocene, Pliocene epochs; and**

Quaternary = Pleistocene (the ice age) and Holocene (recent) epochs.

**** Know that the Pangaea continued to break up to its present locations of lands and oceans.**

**** Formation of the Himalayas, Alps, and Mediterranean Sea by closing of the Tethys Sea are some important events.**

**** Climate change and related fluctuations in sea levels played a major role in human migration.**

**** Know that the formation of Hawaiian islands, East African Rift valley (the Red Sea), Great Barrier Reefs, the Niagara Falls, the Grand Canyon, and majors deltas in**

the world did take place during the Cenozoic Era.

**** Evolution of mammals (know what they are), including modern humans did take place during the Cenozoic time.**

**** Know the role humans played and continue to play during the Quaternary period.**