

Exam 4 Review

I. Paleozoic History

- A. be able to name the first three Eons of Earth history in order from oldest to youngest
- B. be able to name the periods of paleozoic in order from oldest to youngest
- C. Be able to name what continents Gondwana is composed of
- D. Be able to name what continents Laurentia is composed of
 1. Be able to describe the geographic orientation of Laurentia throughout the paleozoic
 2. Be able to use lithologic evidence to determine paleoenvironments of the Paleozoic
 3. Be able to identify both the Cordilleran and Appalachian regions of North America
 4. Be able to describe how previous geologic features formed throughout the precambrian affected the positions of sedimentary facies in the Paleozoic
 5. Be able to define what is meant by a cratonic sequence
 - a) Be able to describe the events leading to and notable formations within:
 - (1) Sauk Sequence
 - (2) Tippecanoe Sequence
 - (3) Kaskaskia Sequence
 - (4) Absoroka sequences

6. Be able to describe how plate boundaries in both the cordilleran and appalachian regions change throughout the paleozoic.
7. Be able to describe the events leading to:
 - a) the Taconic Orogeny
 - b) the Acadian Orogeny
 - c) The formation of the Catskill Delta
 - d) the Alleghenian Orogeny

II. Life of the Paleozoic

1. Marine Invertebrates
 - a) Be able to explain how plate tectonics may have influenced the evolution of life in the early paleozoic.
 - b) Be able to describe Nectic, Planktic, and Benthic environments.
 - c) Be able to describe the significance of the Burgess Shale.
 - (1) What type of fossilization occurred in the Burgess Shale
 - d) Be able to describe the significance of Pikaia.
 - e) Be able to explain why it is important to differentiate between articulate and inarticulate brachiopods when used for environmental analysis.
 - f) Be able to identify the NY State Fossil?
2. Continental Invertebrates
 - a) be able to explain why the continental invertebrate fossil record is less complete than the that of marine invertebrate

- b) be able to explain what may have influenced life's movement into continental environments

3. Vertebrates

a) Be able to describe the evolution of fish

- (1) What is Agnatha
- (2) What is Aconthodii
- (3) What is Chondrichthyes
- (4) What is Osteichthyes
 - (a) Be able to describe Actinopterygians
 - (b) Be able to describe Sarcopterygians and their possible link to tetrapod evolution

b) Be able to describe a tetrapod

- (1) Be able to describe Amphibians
- (2) What evolutionary advances had to occur to allow movement of vertebrates onto land
- (3) Be able to describe an amniotic egg and why this style of reproduction allowed greater expansion of land vertebrates
- (4) Be able to describe difference between Reptilia and Synapsids

4. Plants

a) Be able to describe the evolution of land plants

- (1) how do vascular plants differ from earlier photosynthetic plants
- (2) What is the significance of the Gilboa Fossils in NY

5. Mass Extinctions

a) Be able to identify mass extinctions of the paleozoic and their possible causes

- b) What effect does a mass extinction have on those organisms that survive?

III. Mesozoic History

1. Be able to name the periods of the Mesozoic
2. Be able to describe the break of Pangea
3. Be able to describe the orogenies of the west coast:
 - a) Sonoma Orogeny
 - b) Nevadan Orogeny
 - c) Sevier Orogeny
4. Be able to describe the event marking the end of the Mesozoic
 - a) Be able to describe shock quartz and tektites

IV. Mesozoic Life

A. Be able to describe:

1. Amphibians
2. Synapsids
3. Diapsids

V. Basal Archosaurs

VI. Dinosaurs

A. Saurischia

1. Theropods
2. Sauropodomorphs

B. Ornithischia