

Biol 341 test 2 practicing quiz

Match the period with the corresponding biological events.

- a. Cambrian 542mya
- b. Carboniferous 359 mya
- c. Devonian 488 mya
- d. Jurassic 200mya
- e. Quaternary 2.6 mya

- ___ 1. Gymnosperms common, large dinosaurs
- ___ 2. First forests, gymnosperms appear, wingless insects appear, fish with jaws, amphibians appear
- ___ 3. Bacteria and cyanobacteria, algae, fungi, age of marine invertebrates, first chordates
- ___ 4. Forests of ferns, spread of ancient amphibians, first reptiles
- ___ 5. Extinction of large mammals; age of *Homo sapiens*

Indicate whether the statement is true or false. If it is false, change the identified word(s) to make the statement true.

- ___ 6. Fossil stromatolites are evidence that cells existed 3.5 million years ago.

- ___ 7. The prebiotic soup hypothesis proposes that organic molecules formed from cracks in the ocean floor.

- ___ 8. Membership in a clade cannot be established by shared ancestral traits alone.

- ___ 9. A(n) paraphyletic group consists of several evolutionary lines that do not share a common ancestor.

- ___ 10. Mitochondria and chloroplasts have their own circular DNA and translational components.
- ___ 11. Dolphins share synapomorphies with mammals.

- ___ 12. The number of similarities in certain DNA or RNA nucleotide or amino acid sequences may be used as a molecular clock to indicate how much time has passed since the groups branched from a common ancestor.

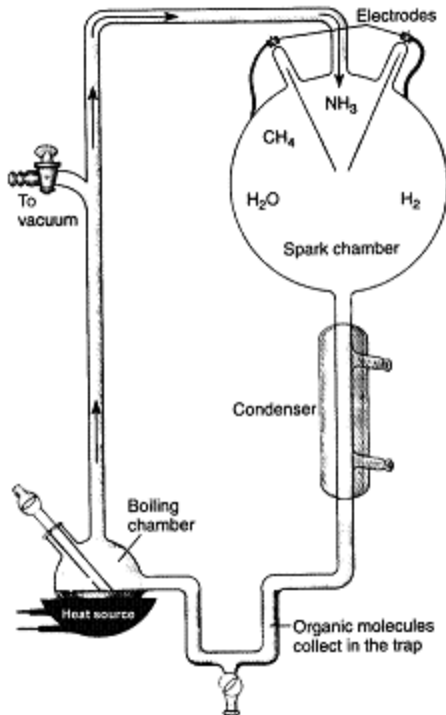
- ___ 13. Clay is considered a possible site for early polymerization because it binds organic monomers and contains zinc and iron ions that may have functioned as ATP.

- ___ 14. The similarity between the bodies of sharks and dolphins is an example of convergent evolution.
- ___ 15. In vertical gene transfer, genes move from one species to another species in the same generation.

Biol 341 test 2 practicing quiz

Indicate the answer choice that best completes the statement or answers the question.

___ 16. What was the purpose of the spark chamber in this experimental apparatus?



- a. To generate heat
 - b. To produce ATP
 - c. To stop the reaction
 - d. To generate lightening
 - e. To produce UV radiation
- ___ 17. A monophyletic group is defined by:
- a. clades.
 - b. DNA sequences.
 - c. shared derived characters.
 - d. shared ancestral characters.
 - e. most common recent ancestor.
- ___ 18. Which were the first organisms to release oxygen by photosynthesis?
- a. algae
 - b. cyanobacteria
 - c. gymnosperms
 - d. flowering plants
 - e. green sulfur bacteria

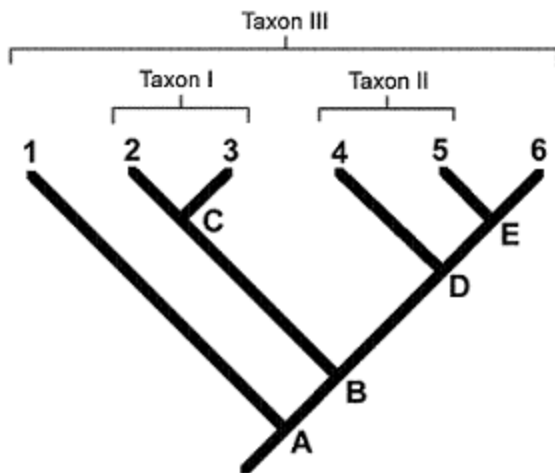
Biol 341 test 2 practicing quiz

- ___ 19. Scientists are now grouping reptiles with birds and mammals because they are all vertebrates that have a(n):
- a. divided brain.
 - b. amniotic egg.
 - c. mammary gland.
 - d. jointed appendage.
 - e. epidermal covering.
- ___ 20. Which of the following taxa would be the *least* inclusive?
- a. genus
 - b. family
 - c. phylum
 - d. order
 - e. class
- ___ 21. Which is the largest division of the geologic time scale?
- a. eon
 - b. era
 - c. epoch
 - d. period
 - e. millennium
- ___ 22. Which are assemblages of abiotically produced polymers?
- a. ribozymes
 - b. stromatolites
 - c. protobionts
 - d. endosymbionts
 - e. polyribosomes
- ___ 23. Which of the following taxa would be the *most* inclusive?
- a. genus
 - b. family
 - c. species
 - d. order
 - e. class
- ___ 24. What was the dominant life form of the Mesozoic era?
- a. fish
 - b. reptiles
 - c. mammals
 - d. amphibians
 - e. vascular plants

Biol 341 test 2 practicing quiz

- ___ 25. A significant reduction in the amount of which gas would allow more ultraviolet radiation to reach Earth's surface?
- a. oxygen
 - b. methane
 - c. ozone
 - d. cyanide
 - e. carbon dioxide

Figure 23-2



- ___ 26. In the accompanying figure, the pair of organisms that have the most recent ancestor is:
- a. 2 and 4.
 - b. 6 and 4.
 - c. 4 and 5.
 - d. 2 and 3.
 - e. 1 and 2.

- ___ 27. *Zea mays* is the scientific name of the corn plant. *Zea* represents the:
- a. class.
 - b. genus.
 - c. species
 - d. family.
 - e. division.

Biol 341 test 2 practicing quiz

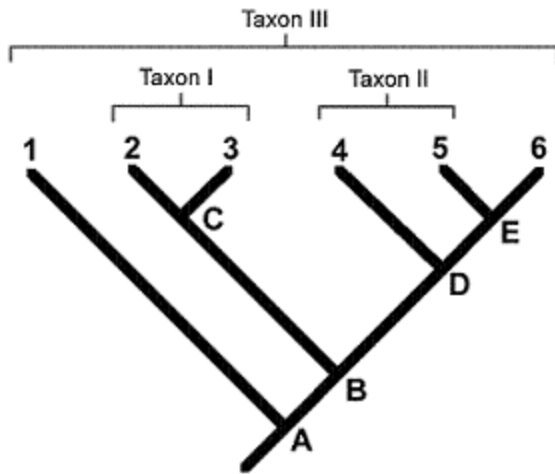
- ___ 28. Sea snakes, which are reptiles, are similar in body form to eels, which are fish. Sea snakes and eels therefore demonstrate:
- a. role reversal.
 - b. ancestral traits
 - c. homologous traits.
 - d. divergent evolution.
 - e. convergent evolution.
- ___ 29. What was a significant outcome of the Miller and Urey experiment?
- a. They demonstrated natural selection.
 - b. They were the first to synthesize living cells.
 - c. They proved that life did not originate on Earth.
 - d. They proved that the iron-sulfur world hypothesis was false.
 - e. They synthesized organic molecules from inorganic materials.
- ___ 30. What is the approximate age of Earth?
- a. 4.6 million years
 - b. 500 million years
 - c. 2.7 billion years
 - d. 3.6 billion years
 - e. 4.6 billion years
- ___ 31. The greatest mass extinction of all time occurred at the end of the ___ era, in which more than 90% of all existing marine organisms became extinct.
- a. Archaean
 - b. Paleozoic
 - c. Cenozoic
 - d. Mesozoic
 - e. Proterozoic
- ___ 32. After Kingdom, what is the next taxon by which organisms are grouped?
- a. class
 - b. order
 - c. genus
 - d. family
 - e. phylum
- ___ 33. Scientific names are typically derived from the root of which language?
- a. Latin
 - b. French
 - c. English
 - d. Italian
 - e. German

Biol 341 test 2 practicing quiz

- ___ 34. Taxonomy is the science of:
- a. conserving biodiversity.
 - b. making new biological species.
 - c. naming, describing, and classifying organisms.
 - d. comparing macromolecules to assess evolutionary relationships.
 - e. generating cladograms that represent evolutionary relationships between organisms.
- ___ 35. The evolutionary history of a group of organisms from a common ancestor is known as:
- a. biohistory.
 - b. phylogeny.
 - c. phrenology.
 - d. phenetics.
 - e. species origination.
- ___ 36. Vascular plants and air-breathing animals first appeared during which time period?
- a. Silurian period
 - b. Permian period
 - c. Cambrian period
 - d. Ordovician period
 - e. Cretaceous period
- ___ 37. Why is there very little physical evidence of life from rocks of the Archaean eon?
- a. Those rocks have been deeply buried in most parts of the world.
 - b. Those rocks occupy inaccessible areas of mountainous regions.
 - c. Those rocks have been greatly eroded in most parts of the world.
 - d. Those rocks occupy the polar regions and are thus covered by glaciers.
 - e. Those rocks have been deposited in oceanic trenches deep in the oceans.

Biol 341 test 2 practicing quiz

Figure 23-2



- ___ 38. In the accompanying figure, the taxon labeled II is:
- a clade.
 - paraphyletic.
 - polyphyletic.
 - an outgroup.
 - monophyletic.
- ___ 39. Why is it believed that RNA was the first informational molecule to evolve?
- RNA molecules can replicate into DNA molecules.
 - RNA molecules are more central to modern inheritance than DNA.
 - RNA molecules degrade more slowly in solution than DNA molecules.
 - RNA molecules are much simpler structures than other macromolecules.
 - RNA molecules are able to function as both enzymes and substrates for their own replication.
- ___ 40. Which type of organisms were likely the first land animals?
- birds
 - reptiles
 - mammals
 - amphibians
 - arthropods

Biol 341 test 2 practicing quiz**Table 23-1**

Plantae	Terrestrial, multicellular, photosynthetic organisms
Anthophyta	Vascular plants with flowers, fruits, and seeds
Monocotyledones	Monocots. Flowering plants with one seed leaf (cotyledon) and flower parts in threes
Commelinales	Monocots with reduced flower parts, elongated leaves, and dry 1-seeded fruits
Poaceae	Grasses with hollow stems; fruit, a grain; and abundant endosperm in seed
Zea	Tall annual grass with separate female and male flowers
mays	Only one species in genus -- corn

- ___ 41. Based on the accompanying table, which of the following characteristics are used to establish the family level of classification for corn?
- terrestrial and photosynthetic
 - a grass with hollow stems
 - a flowering plant
 - 1-seeded fruit
 - monocot
- ___ 42. The vertebrae of today's cod fish is a _____ with the prehistoric bony fish who also possessed vertebrae.
- homoplastic character
 - monophyletic character
 - shared derived character
 - shared ancestral character
 - shared homologous character
- ___ 43. Which hypothesis suggests that organic molecules formed near Earth's surface in pools of water?
- clay hypothesis
 - iron-clay hypothesis
 - organic broth hypothesis
 - prebiotic soup hypothesis
 - iron-sulfur world hypothesis
- ___ 44. Who developed the binomial system of nomenclature?
- Charles Darwin
 - Carolus Linnaeus
 - Gregor Mendel
 - Paul Hebert
 - Ernst Haeckel

Biol 341 test 2 practicing quiz

- ___ 45. The occurrence of an RNA world early in the history of life can never be proven, but experiments with _____ have shown that it is feasible.
- a. in vitro evolution
 - b. Darwin's evolution
 - c. indirected evolution
 - d. chemical evolution
 - e. biological evolution
- ___ 46. When faced with multiple possible cladograms, the criteria of _____ is employed.
- a. cladology
 - b. subtraction
 - c. biodiversity
 - d. parsimony
 - e. evolutionary deduction
- ___ 47. Molecular evidence indicating less than 50% shared genes was the basis for:
- a. dividing the prokaryotes into two domains, Bacteria and Archaea.
 - b. separating the kingdom Protista from the kingdom Animalia.
 - c. including algae and slime molds in the kingdom Protista.
 - d. the separation of eukaryotes and prokaryotes.
 - e. placing fungi in a separate kingdom.
- ___ 48. The term clade most closely refers to:
- a. a class.
 - b. the binomial system of classification.
 - c. a mechanism of horizontal gene transfer.
 - d. a subspecies of organisms does *not* include a subgenus.
 - e. a group of organisms that share common characteristics inherited from a common ancestor.