

Exam #3 Study Guide

Use your book as a reference if you don't understand something, or better yet, ask me!

EVOLUTION

What is biogeography?

What is comparative morphology?

What is evolution?

What is catastrophism?

What is the theory of the inheritance of acquired characteristics/gradualism?

What is the theory of uniformity? Why was this important to Darwin?

Where did Darwin go to see his finches?

Who else came up with the theory of evolution with the mechanism of natural selection?

What is natural selection & its main premises? What is evolution?

What is fitness? What's an adaptive trait?

What is continental drift? What is plate tectonics?

What is Pangea?

What happens at ridges? What happens at trenches? What are those processes called?

What are homologous and analogous structures?

What is taxonomy? Who was the father of modern taxonomy? What was his classification system? What is a scientific name? What is the order from most general to most specific classification?

Do individuals evolve? What's a gene pool?

What are 4 microevolutionary mechanisms? What is microevolution?

What are the differences between stabilizing, directional, and disruptive selection?

What's sexual selection?

What is genetic drift? What is gene flow? What is the bottleneck and founder effect?

What are the 6 different reproductive isolating mechanisms?

What is macroevolution? What are the 2 models of macroevolution?

MICROBIAL LIFE

What are viruses? What do they do? How do they replicate? What do they consist of? Give an example of a virus.

What are the 5 steps of viral multiplication cycles? What happens at each step?

What are viroids and prions? What is their structure? What causes mad cow disease?

Which domains are prokaryotic? What does prokaryotic mean?

What are the typical cell surface structures in prokaryotes? What are the 3 typical prokaryotic shapes?

Where is the DNA located in a prokaryote?

What is prokaryotic fission?

How can genes be exchanged between prokaryotes? What is conjugation? Which are the most common and diverse prokaryotes?

What are some beneficial things that bacteria do?

What domain are the Archeans in? Where do they fit between Bacteria and Eukarya?

What is infection? What is disease? What are the four different types of diseases?
Why don't pathogens take over the world?

PROTISTS

What domain are protists in? What kingdom? What are the simplest eukaryotes? What are eukaryotes? What are protists?

Why did I call Kingdom Protista the “catch-all” Kingdom?

Be able to identify organisms from Kingdom Protista!!!

What groups are in the flagellated protozoans?

What kingdom do foraminiferans and radiolarians belong to? What special feature do they have?

What does the term plankton mean?

What groups are in the alveolates? What are alveolates? Which ones have cilia? Which ones cause red tides? Which ones cause malaria?

Which groups are in the stramenopiles? Which ones photosynthesize?
What's the largest protist?

What are the groups of green algae? Which one is the closest relative of plants?

Which type of algae can survive at the deepest depths? Why are they able to do so?

What groups are in the amoebozoans?

What are the two types of slime molds? Know the different properties of each!
What type of protist are the closest living protistan relative to fungi and animals?

FUNGI

What Kingdom is Fungi?

Where is food digested in fungi?

What are saprobes?

How can fungi feed?

What are the groups of fungi? How are they classified into their groups?

What are mycelia and hyphae?

What are yeast?

How do fungi reproduce?

Which groups of fungi have a dikaryotic stage? Which don't? What does dikaryotic mean?

What are the 4 groups of fungi that we talked about?

What are chytrids? What makes them unique among the fungi?

What kinds of fungi form zygospores? What kinds of fungi are zygomycetes? What's an example of a zygotic fungi?

What are ascomycetes? What are their properties? What is this group's common name? What is the reproductive structure in this group called? What's an example of an ascomycete? What's the name of the spores that this group produces? Where are these spores produced?

What are basidiomycetes? What are their properties? What is this group's common name? What is the reproductive structure in this group called? What's this structure commonly called? What's an example of a basidiomycete? What's the name of the spores that this group produces? Where are these spores produced?

What's a lichen? What's mycorrhizae? What's mutualism? How are lichens and mycorrhizae examples of mutualism?

PLANTS

Which are the groups of seed plants? Which don't have seeds? Which group has flowers? Which don't? Vascular plants? Non-vascular? Think of all of the various groups of plants. Know what each group has and doesn't have!

What are gametophytes? What are sporophytes? Which is haploid and which is diploid?

Haploid or diploid? Sporophyte, zygote, spores, gametophyte, gametes.

What do sporophytes produce? What do gametophytes produce? What is the alternation of generations? Which stage is most dominant in primitive plants? Which one is dominant in modern plants?

What is xylem? What is phloem? What is a cuticle used for? What's a stomata's function?

What groups are bryophytes? What characteristics do bryophytes share? What's unique about this group?

What groups are in the seedless vascular plants? What characteristics do these share? What's unique about this group? What evolutionary advancements do they possess?

What did the development of the seed allow the plant to do? What groups are in the seed plants? What characteristics do these share? What's unique about this group? What evolutionary advancements do they possess?

Which groups have haploid dominance? Diploid dominance?

What is the difference between gymnosperms and angiosperms? What are the groups in each?

What are microspores and megaspores? What do they develop into? Where do they form on a flower?

What are pollen grains? What are seeds?

Which group has flowers? What are the male and female parts called on the flower? Which group has fruit? What is a fruit?

What is coevolution?

What are the groups of angiosperms?

What is the most widely distributed and diverse plant group?

What's the endosperm? What's double fertilization?

ANIMALS - INVERTEBRATES

What properties make an animal an animal? Are most vertebrates or invertebrates?

What are tissues? What are the tissue layers found in animal embryos? Which phyla have tissues? Which don't? Which have two tissue layers? Which have three?

What do bilateral and radial symmetry mean? Which phyla have which??? Which is more advanced?

What is cephalization?

What's a complete digestive system? What's an incomplete digestive system? Which phyla have a complete digestive system? Which don't?

What's a coelom? What does acoelomate, pseudocoelomate and coelomate mean?

What are protostomes and deuterostomes? Which phyla are protostomes? Which are deuterostomes?

What's segmentation? Which groups are known for this?

What protist did animals most likely evolve from?

What is the simplest living animal?

Placazoans – What phylum? what symmetry? tissues? organs? Coelom?

Sponges – What phylum? what symmetry? tissues? organs? Coelom? What kind of cells help them feed?

What's a larva?

Cnidarians – What organisms are cnidarians? What phylum? what symmetry? Coelom? How many tissue layers? What's mesoglea – what phylum can you find this in? What are the two body forms in cnidarians? What are nematocysts? What type of nervous system and skeleton do they have?

Flatworms – What phylum? What symmetry? # of tissue layers? Coelom?

Annelids – what's their unique characteristic? What types of organisms are annelids? What phylum? What symmetry? # of tissue layers? Coelom?

Mollusks – What phylum? What types/groups of organisms? What symmetry? # of tissue layers? Coelom? What's a mantle? What's the radula? What group has the largest invertebrates?

Roundworms – What phylum? Coelom? # of tissue layers? Unique characteristic?

Arthropods – What phylum? What symmetry? # of tissue layers? Coelom? What phylum? What are the four subgroups – what organisms make up these subgroups?

What's the most diverse animal phylum? What are their key adaptations?

What are chelicerates? What are crustaceans? What are myriapods? What are insects? Be able to give an example!

Echinoderms – What phylum? What symmetry? # of tissue layers? Coelom? What kind of organisms? Deuterostome or protostome? What is the water vascular system? What are tube feet? Unique characteristics of this group? How does the symmetry vary for this group?

ANIMALS - VERTEBRATES

Are all vertebrates chordates? Are all chordates vertebrates?

What are the 4 chordate characteristics? What phylum?

Which groups are the invertebrate chordates? What is the only group of chordates that retains all chordate characteristics as adults?

What are the two groups of jawless fish?

What is a craniate? What groups are craniates? What is the only craniate that is not a vertebrate?

Why is a vertebrate a vertebrate? What subphylum? What feature does it possess?

Lampreys - What phylum? What subphylum?

What are the two groups of fish with jaws?

Cartilaginous fish – What phylum? What's the scientific classification? What subphylum? What major features? What major advancement? What organisms comprise this group?

Bony fish – What major features? What major advancement? What's the scientific classification? What organisms comprise this group? What are the major groups of bony fishes? Which group is the most diverse of the vertebrates?

What makes the lobe-finned fish so special. What's the organism that makes up this group? What were these lobe-finned fish/lungfish the precursors of?

Amphibians – What phylum? What subphylum? What organisms make up this group? What major advancement? What major features?

Amniotes – What major advancement? What are the 4 amniotic groups, and which organisms are represented in each group?

What is the K-T asteroid impact hypothesis?

Reptiles – What major groups are there? What major advancement? What features? Of the reptiles, which are closest to the birds?

Birds – What major advancement? What features? What does endotherm mean?

Mammals – What major advancement? What features? What are the 3 major lineages of modern mammals and what makes each lineage unique? Be able to give an example of each lineage!

What groupings do the primates, anthropoids, and hominids include?

Which genus came first, *Australopithecus* or *Homo*? Which species of *Homo* is thought to have led to *Homo sapiens*?

What is the difference between the multiregional model and the replacement model of human development?