

Final Semester Exam 2008

PreAP Biology

- Are viruses alive?
 - No
- As an organism's environment changes, SEXUAL reproduction improves a species' ability to evolve.
- Be able to label identify the levels in a food chain.
 - Such as producer, 1^o consumer (herbivores), 2^o consumers
- Compare and contrast between a eukaryotic and prokaryotic cell.
 - Prokaryotic cells lack membrane organelles and a nucleus, examples are bacteria
 - Eukaryotic cells contain organelles and a nucleus
- Compare and contrast between plant and animal cells.
 - Plant cells have a cell wall, mitochondria, chloroplasts and when they divide develop a sieve plate
 - Animal cells lack chloroplasts and cell wall, and also contain mitochondria
- Contrast between endothermic and ectothermic animals.
 - In endothermic aka cold-blooded, body temperature is regulated by the environment
 - In ectothermic aka warm-blooded, body temperature is constant
- Define a food web.
 - Network of complex interactions among organisms in a community
- Define producer and give an example.
 - A producer is a photosynthetic organism such as algae or plants
- Define symbiosis. List and explain example of symbiotic relationships.
 - Symbiosis is two organism living together
 - Examples are commensalism, predation, mutualism, parasitism
- Describe an annelid?
 - A segmented worm
- Describe the appendages of arthropods?
 - Jointed and extend from the body wall
- Describe the life of a sessile animal.
 - Non-motile
- Example how amphibians breathe during the different stages of their life cycle?
 - Early tadpole has gills to breathe...adult frogs have lungs
- Examples of modern jawless fish?
 - Hagfish and lamprey
- Explain the leaf and root adaptation of prickly-pear cactus to the environment.
 - Leaf is adapted for protection and water storage
 - Roots are shallow and expansive for collecting water
- First vertebrates to evolve were?
 - Fish
- Function of swim bladder?
 - Control buoyancy of fish
- How do mushrooms obtain energy? Are they photosynthetic?
 - Mushrooms are non-photosynthetic and obtain energy by decomposing other organisms
- How do sponges (Porifera) feed?
 - Filter feeders
- How is bacteria treated? Viruses?
 - Bacteria are treated with antibiotics, refrigeration only slows down growth
 - Viruses are prevented with vaccines
- Immigration vs. emigration.
 - Immigration is the movement of organism into an area
 - Emigration is the movement of organisms out of an area
- In angiosperms, reproduction takes place in flower?
- Is AIDS a viral or bacterial?
 - viral
- Know the rules of scientific naming.
 - Made of Genus and species
 - Genus is capitalized
 - Species is lowercase
 - Underlined or italicized
- Know the shapes of bacteria.
 - Cocci-round
 - Bacilli-rod
 - Sprilla-spiral

26. List abiotic and biotic factors.
 - a. Nonliving are abiotic factors such as water, mineral, rock
 - b. Living are biotic factors such as plants, bacteria, animals
27. List characteristics of mammals.
 - a. Hair, mammary glands, endothermic
28. List main characteristics of ALL birds?
 - a. Outer covering with feathers, endothermic, and two legs....NOT ALL FLY
29. List the biochemical cycles, what do these cycles ensure?
 - a. Water cycle, carbon cycle, nitrogen cycle...these cycles ensure nutrients are efficiently cycled throughout the ecosystem
30. List the kingdoms of eukaryotic organism.
 - a. Protists, Fungi, Plant, and Animal
31. List the types of plant responses, called tropisms.
 - a. Gravitropism-response to gravity
 - b. Phototropism-response to light
32. Lytic vs. lysogenic infection.
 - a. Lytic cycle is when virus is rapidly reproduces inside host cells and spreading
 - b. Lysogenic is the dormant stage of viral life cycle
33. Two body types of Cnidarians.
 - a. Medusa and polyp
34. Warm-blooded animals with hair and mammary glands are in what class?
 - a. The class mammalia
35. What are organisms that obtain nutrients by breaking down dead and decaying plants and animals called?
 - a. decomposers
36. What are small, photosynthetic organisms found near the surface of the ocean are called? Why are they the most important group of organism on our planet?
 - a. Phytoplankton, they are important b/c they supply most of the Earth's oxygen
37. What are the bristlelike structures on some annelids' bodies?
 - a. setae
38. What are the combined portions of Earth in which all living things exist is called?
 - a. biosphere
39. What are the techniques/rules for identifying bacteria?
 - a. Bacteria are classified based on cell wall composition and shape
 - b. Gram + is purple
 - c. Gram – is pink
40. What are the three main groups of mammals?
 - a. Monotremes, marsupials, and placental
41. What do ALL organisms have in common?
 - a. A form of genetic material (DNA or RNA) to pass on their genes to offspring
42. What do bacteriophages infect?
 - a. Viruses that infect bacteria
43. What do similar genes between to organism indicate?
 - a. Similar genes indicate a common ancestor
44. What do the vascular tissues xylem and phloem transport?
 - a. Xylem transports water
 - b. Phloem transports food (sugars)
45. What does a ripened ovary develop into?
 - a. fruit
46. What flower structure produces pollen?
 - a. Anther
47. What is a fruiting body?
 - a. The "mushroom" you see growing above ground
48. What is a multiceller, eukaryote that produces oxygen?
 - a. plants
49. What is a nerve net?
 - a. A primitive nervous system found in Cnidarians made of nerve cells
50. What is a pathogen? List examples.
 - a. An infectious agent such as bacterial or viral
51. What is a tangled mass of hyphae?
 - a. mycelium
52. What is an nematocysts? What are 2 functions of nematocysts?
 - a. The stinging cell of the Cnidarians used for protection and to capture prey
53. What is an organism that feeds only on plants and animals?

- a. Omnivore
54. What is an organism that feeds only on plants?
- a. Herbivore
55. What is an organism's niche?
- a. Range of physical and biological conditions an organism needs to survive
56. What is the "reserve copy" of genes in paramecium?
- a. micronuclei
57. What is the branch of biology dealing with interactions among organisms?
- a. ecology
58. What is the early stage of plant embryo?
- a. germination
59. What is the function of a plant stem?
- a. Transport water and food between roots and leaves
60. What is the function of the scolex?
- a. Hook-like mouth part of tapeworm used to attach to the lining of intestines
61. What is the greenhouse effect? Can we survive without it? Is it natural?
- a. The greenhouse effect is a natural phenomenon that maintain the Earth's temperature...We would die without this effect
62. What is the long flexible supporting rod found in chordates?
- a. Notocord
63. What is the main function of feathers?
- a. To provide lifting force and balance for flight
64. What is the main role of bacteria in the environment?
- a. To break down and cycle nutrients in the soil
65. What is the outer protein covering of a virus called? What does this protein coat protect?
- a. Capsid is the outer covering protecting the DNA or RNA
66. What is the significance of *Penicillium*?
- a. *Penicillium* is the fungus used to make penicillin, an effective antibiotic
67. What is the symmetry of an animal with equal left and right sides?
- a. bilateral
68. What is the term for each step in the transfer of energy and matter within a food web?
- a. Trophic level
69. What is the ultimate, but not only, source of energy in most ecosystems?
- a. sunlight
70. What material contains the instructions to make new copies of viruses?
- a. Double or single stranded DNA or RNA
71. What percent of energy can be passed from one trophic level to the next?
- a. 10% is lost as heat
72. What process is carried-out by plants? What is required? Without gas exchange, what would plants be unable to generate?
- a. Photosynthesis is a process that requires carbon dioxide, and w/o gas exchange the plant is unable to generate sugars
73. What process is carried-out by yeast? What gas is not required? What gas is generated?
- a. Fermentation, a process that does not require oxygen, and generates carbon dioxide
74. What structure anchors a plant?
- a. The roots
75. What structure carries-out photosynthesis?
- a. chloroplast
76. What structure in plant exchanges gases with the atmosphere? What does it look like? Where is it found on the leaf?
- a. Stomata on the underside of the plant leaf exchanges gases
 - b. They look like two beans
77. What substances allow plants and algae to obtain energy from the sun?
- a. Chlorophyll and accessory pigments
78. What type of root is a carrot?
- a. taproot
79. Where are arthropods found?
- a. Air, land, water, inside hosts...EVERYWHERE
80. Which are the 3 groups of protists? How does each obtain energy?
- a. Plant-like are photosynthetic, animal-like are consumers, and fungus-like are decomposers
81. Which group of chordates has a backbone?
- a. Vertebrates
82. Why do arthropods molt?
- a. Molting is a process that allows Arthropods to grow