

Biology EOC Review Guide  
UNIT 7 & 8 (EVOLUTION / CLASSIFICATION & ECOLOGY)

1. What is evolution?
2. What are the conditions of Earth 4.6 billion years ago?
3. What caused the formation of the oceans?
4. Summarize Miller and Urey's experiment to recreate how life began on Earth.
5. Which organisms are hypothesized to be the first living things on Earth?
6. Define abiogenesis.
7. Describe the two experiments that disproved abiogenesis:
  - a. Redi's
  - b. Pasteur
8. Define biogenesis.
9. By which process did Charles Darwin believe organisms evolved?
10. Summarize this theory.
11. Describe the following examples:
  - a. peppered moth
  - b. antibiotic resistance
12. What must be present in order for natural selection to occur?
13. List all the evidences of evolution. Which is the strongest of those listed?
14. Summarize and give examples for the following anatomical structures:
  - a. homologous
  - b. analogous
  - c. vestigial

15. What is speciation?

16. What is Geographic Isolation and how does it lead to speciation?

17. Draw graphs that show:

a. Exponential Growth

b. Logistic Growth

18. Give 3 examples of adaptations.

19. How is pesticide resistance an adaptive advantage?

20. What are the two ways one can obtain active immunity?

21. How do you get passive immunity?

22. What is taxonomy?

23. Who was the first to classify living things?

24. Which two names make up binominal nomenclature?

25. List the 7 categories of classification in order from broadest to most specific.

26. What is the purpose of a dichotomous key?

27. What is the purpose of a phylogenetic tree? Draw a simple phylogenetic tree with differentiation of 4 organisms.

28. Fill in the following chart:

| Kingdom  | Cell Type | Cell Number | Nutrition | Examples |
|----------|-----------|-------------|-----------|----------|
| Bacteria |           |             |           |          |
| Protista |           |             |           |          |
| Fungi    |           |             |           |          |
| Plantae  |           |             |           |          |
| Animalia |           |             |           |          |

29. Describe each of the following life functions:

a. transport

b. excretion

c. respiration

d. nutrition

e. reproduction

30. Differentiate between internal and external fertilization.

31. List 3 ways that bacteria can be useful.

32. What structure do protists have to help maintain water levels?

33. What are the three categories of protists?

34. What do euglena have to help them detect sunlight?

35. How amoebas ingest food?

36. How do ciliates move?

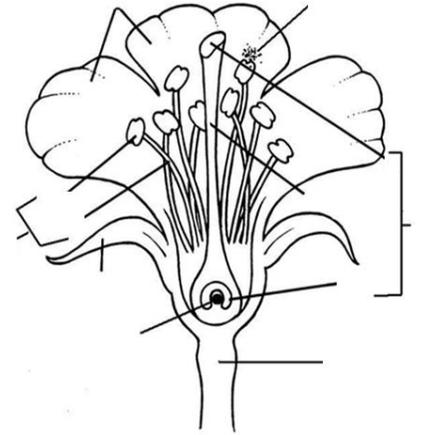
37. How do flagellates move?

38. How do fungi get nutrients?

39. Why are fungi so important to the ecosystem? (think - circle of life.)

40. How are the cell walls of fungal cells different from those in plant cells?

41. Label the flower diagram to the right.  
(Petals, Filament, Style, Sepal, Stamen, Anther, Stem, Ovule, Ovary, Stigma, Pistil, Style, Pollen)



42. What do roots do for a plant?

43. What do the petals do for a flower?

44. List and describe the two types of vascular tissue.

45. Nonvascular plants rely on what process to transport water and sugar throughout the plant?

46. What happens in the leaves of plants?

47. What are stomata?

48. What controls the stomata?

49. What is the cuticle and what purpose does it serve?

50. Give an example of a nonvascular plant and a vascular plant.

51. Give the functions for each part of the flower:

a. stigma

b. style

c. ovary

d. anther

e. filament

52. Fill in the following chart:

|          | Breathing - lungs / gills | Endo/Ectothermic | # of heart chambers | Fertilization - internal or external | Examples |
|----------|---------------------------|------------------|---------------------|--------------------------------------|----------|
| Fish     |                           |                  |                     |                                      |          |
| Amphibia |                           |                  |                     |                                      |          |
| Reptilia |                           |                  |                     |                                      |          |
| Aves     |                           |                  |                     |                                      |          |
| Mammalia |                           |                  |                     |                                      |          |

53. Describe each of the following innate animal behaviors:

a. suckling

d. migration

b. phototaxis

e. hibernation

c. chemotaxis

f. estivation

54. Describe each of the following learned animal behaviors:

a. habituation

c. classical conditioning

b. imprinting

d. trial and error

55. Summarize Pavlov's experiment with dogs.

56. Describe each of the following communicative behaviors:

a. pheromones

c. territory

b. courtship

57. What are some ways in which carbon enters the atmosphere?

58. What is the only way that carbon leaves the atmosphere?

59. What is the greenhouse effect?

60. Which greenhouse gas is thought to be the biggest contributor to global warming?

61. What are the consequences of the greenhouse effect?

62. Name the 2 ways nitrogen becomes "fixed" from an unusable gas to a useful solid.

63. How do animals return nitrogen to the soil?

64. Which two types of organisms recycle nutrients through the ecosystem?

65. In a food chain, how much energy is transferred from one trophic level to the next?

66. Where does all energy originate from?

67. Describe and give an example of each of the following relationships:

a. mutualism

b. parasitism

c. commensalism

d. competition

e. predator/prey

68. List three things that would increase the size of a population.

69. List three things that would decrease the size of a population.

70. Define carrying capacity.

71. Define limiting factors and give examples.

72. What is exponential growth?

73. Draw a population graph showing exponential growth in a J curve.
74. Draw a population graph showing a S curve.
75. What is dynamic equilibrium?
76. List 3 reasons for human population growth.
77. What is bioaccumulation??
78. Give an example of bioaccumulation.
79. Define and give an example of an invasive species.
80. Give one way that habitat destruction occurs.
81. List 3 stewardship or conservations methods that have the goal of sustaining resources.