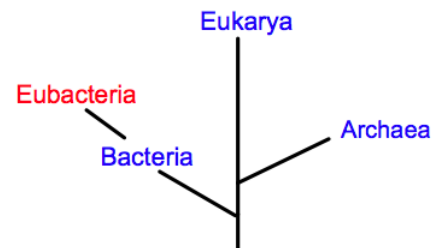


## Multiple Choice Review- Classification

- Which of the following accurately lists the levels of classification in our current taxonomic system?
  - Phylum, kingdom, domain, class, order, family, genus, species
  - Class, domain, kingdom, phylum, order, family, genus, species
  - Domain, phylum, kingdom, class, order, family, genus, species
  - Domain, kingdom, phylum, class, order, family, genus, species
- Which of the following is the most limiting level of classification of an organism?
  - Class
  - Genus
  - Order
  - Species
- Which of the following is the least limiting level of classification?
  - Class
  - Genus
  - Order
  - Species
- Which grouping of organisms is considered to have the greatest amount of diversity?
  - Kingdom
  - Species
  - Domain
  - Order
- What does LUCA represent in classification?
  - The largest universal common ancestor
  - The last universal common ancestor
  - The last unknown convergent ancestor
  - The largest unknown convergent ancestor
- Which of the following shows the correct scientific name for a fruit fly?
  - Drosophila melanogaster*
  - Drosophila Melanogaster*
  - Drosophila Melanogaster*
  - Drosophila melanogaster*
- What can we infer about bacteria based upon the illustration?
  - There is only one kingdom within the domain of bacteria
  - There are three kingdoms with the domain bacteria
  - There is one domain within the kingdom bacteria
  - There are three domains within the kingdom bacteria



A table of characteristics of the three domains of life is shown below. Use this information to complete the next three questions.

Characteristic	Domain A	Domain B	Domain C
Single celled	Some	Yes	Yes
Cell wall		Yes	Yes
Nuclear envelope		No	No
Ribosomes	Yes	?	Yes
Membrane bound organelles		No	No
Membrane lipids	Unbranched phospholipids	Branched, more than one type	Unbranched phospholipids

8. Based upon the information included in the chart above, "Domain A" represents which of the following domains?
  - a. Plantae
  - b. Eukarya
  - c. Bacteria
  - d. Archaea
  
9. Which of the following best completes the table, in the cell marked "?"?
  - a. Yes
  - b. No
  - c. Some
  - d. Unknown
  
10. Based upon the information included in the chart above, "Domain C" represents which of the following domains?
  - a. Plantae
  - b. Eukarya
  - c. Bacteria
  - d. Archaea
  
11. Which of the Domains is most closely related to the LUCA?
  - a. Plantae
  - b. Eukarya
  - c. Bacteria
  - d. Archaea

Below is an illustration showing domains and kingdoms. Respond to the next three questions based upon this illustration.

12. What do the letters D & C represent in the diagram?

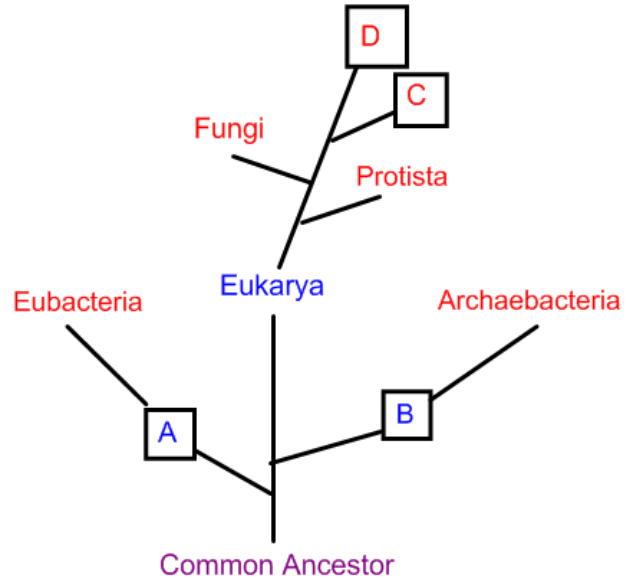
- a. Animals and Plants
- b. Eukaryotes and Prokaryotes
- c. Mammals and Reptiles
- d. Phyla and Classes

13. Which of the following letters represents bacteria within the illustration above?

- a. A
- b. B
- c. C
- d. D

14. Which of the following letters represents kingdoms within the illustration above?

- a. A and B
- b. B and C
- c. C and D
- d. D and A



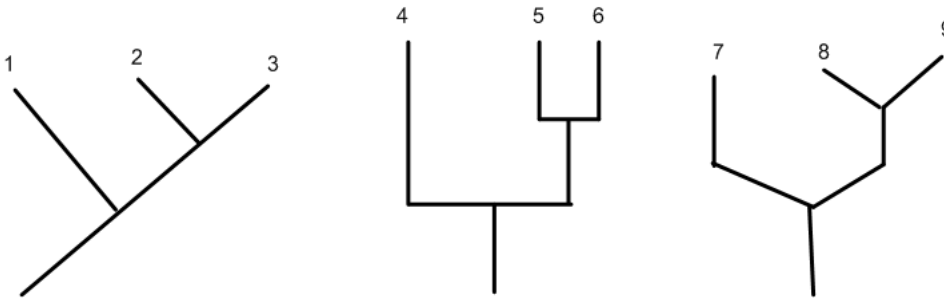
Below is a chart listing some of the traits of each kingdom within the eukaryotic domain. Use this chart to respond to the next three questions:

### Kingdoms of the Eukarya Domain

Characteristic	Protists	Plantae	Fungi	Animalia
Complexity	Usually Unicellular	Multicellular	Usually Multicellular	Multicellular
Nutrition	Heterotrophic by absorption or ingestion; or photosynthetic	Autotrophs by photosynthesis	Heterotrophs by absorption	Heterotrophs by ingestion
Motility	Sometimes by flagella or cilia	Nonmotile	Nonmotile	Yes, by contractile fibers
Life Cycle	Various	Alteration of generations	Haploid	Diploid
Internal Protection of Zygote	No	Yes	No	Yes

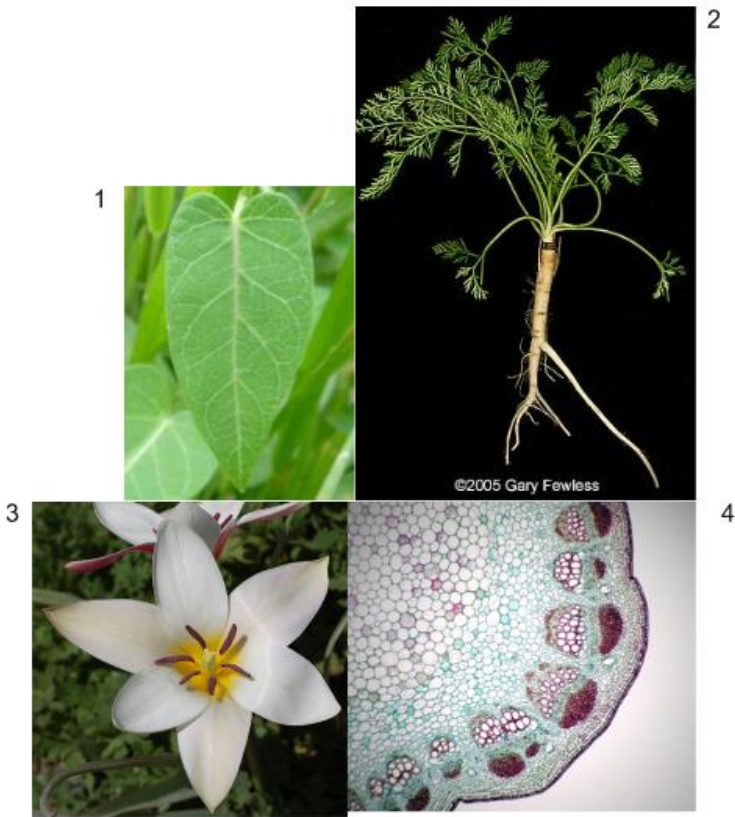
15. One type of organism is multicellular and performs photosynthesis. Into which kingdom does this organism most likely belong?
- Protists
  - Fungi
  - Plantae
  - Animalia
16. One type of organism has some photosynthetic members but is primarily unicellular. They do have a true nucleus and organelles. Into which kingdom does this organism most likely belong?
- Protists
  - Fungi
  - Plantae
  - Animalia
17. These organisms are eukaryotic, nearly all are multicellular; they are non-photosynthetic. To which kingdom do they best fit?
- Protists
  - Fungi
  - Plantae
  - Animalia

**Three cladograms are shown in the images below. Respond to the next two questions based upon these illustrations.**



18. Which of the letters, shown in the illustrations above, represent the same position in the cladogram as "1"?
- 7 and 8
  - 4 and 8
  - 4 and 7
  - 6 and 8

19. Which of the following organisms are most closely related, based upon these cladograms?
- 1 and 2
  - 4 and 5
  - 7 and 8
  - 5 and 6
20. What is the primary purpose of a phylogenetic tree?
- The primary purpose of a phylogenetic tree is to be able to develop species and genus names of new discovered organisms.
  - The primary purpose of a phylogenetic tree is to be able to trace evolutionary relationships amongst organisms.
  - The primary purpose of a phylogenetic tree is to be able to determine which organisms are more advanced than others.
  - The primary purpose of a phylogenetic tree is to be able to determine into which kingdom a living organism belongs.
21. Which of the following is NOT used to determine the phyla to which a plant belongs?
- Absence of a vascular system
  - Presence of seeds
  - Presence of chloroplasts
  - Absence of flowers
22. Which of the following statements regarding plants is correct?
- Conifers, such as cedar trees, do not possess a xylem.
  - Phloem is used to transport water absorbed through the leaves down to the roots of the plant.
  - Flowering plants are separated into two phyla, the angiosperms and gymnosperms.
  - The first plants were most likely aquatic.
23. Which of the following lists characteristics of a dicot?
- Two cotyledons, branched leaf veins, complex arrangements of vascular tissue.
  - Two cotyledons, a tap root, branched leaf veins.
  - Two cotyledons, a fibrous root system, parallel leaf veins.
  - One cotyledon, a tap root, branched leaf veins.



24. Which of the images depicts a monocot?

- a. 1
- b. 2
- c. 3
- d. 4

25. The scientific name for the wild rose is *Rosa acicularis*. What genus does this species belong to?

- a. Eukarya
- b. Plantae
- c. Rosa
- d. Acicularis

26. Which two species of plant are most closely related according to the cladogram?

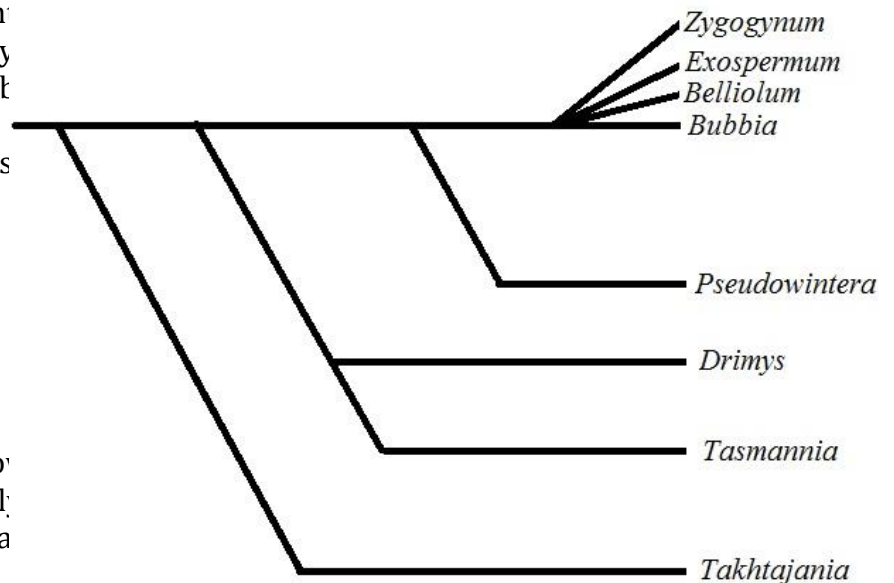
- a. *Zygogynum* and *Bubbia*
- b. *Drimys* and *Pseudowintera*
- c. *Takhtajania* and *Zygogy*
- d. *Pseudowintera* and *Bul*

27. How many derived characters separate *Drimys* from *Pseudowintera*?

- a. 1
- b. 2
- c. 3
- d. 4

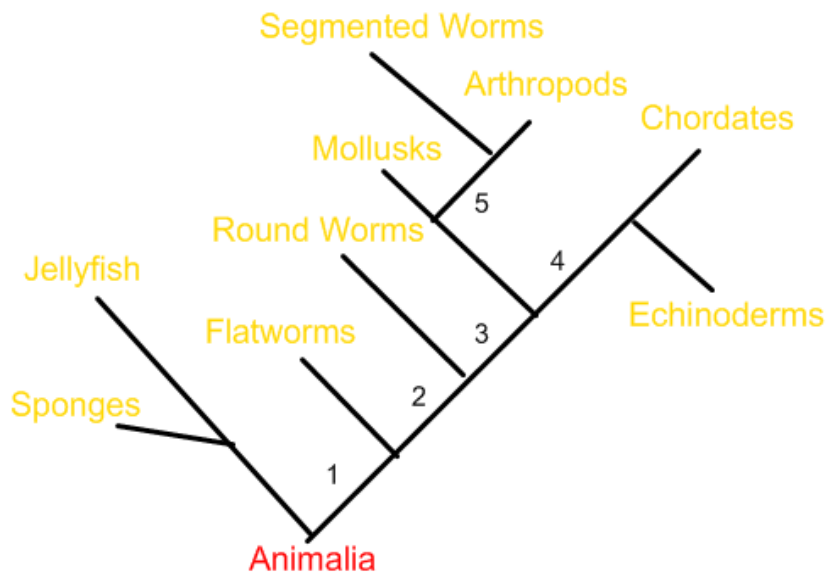
28. *Drimys* is a genus of plant. How can it be determined using only a cladogram that *Drimys* is not a species?

- a. It is italicized.
- b. It is capitalized.
- c. It is not binomial nomenclature.
- d. It cannot be determined solely from this image.



29. During this event the diversity of multicellular animals increased extremely rapidly. How do we refer to this event that occurred during the beginning of the Paleozoic era?
- The Paleozoic blast
  - The Big Bang
  - The Cambrian explosion
  - The diversity blast
30. The presence or absence of a vertebrae helps to distinguish phyla from each other, within the animal kingdom. Which of the following statements accurately describes the presence of a backbone within animal phyla?
- The majority of animal phyla have a backbone
  - 35 out of 36 phyla are invertebrates
  - 35 out of 36 phyla are vertebrate
  - the ratio of vertebrate to invertebrate phyla is 50/50

**Kingdom Animalia contains a number of different phyla, based upon particular traits. Below is a tree based upon some of the traits that differentiate the animal phyla. Respond to the next three questions based upon this illustration.**



31. Consider #1 in the illustration above. Which characteristic is labeled here?
- Bilateral symmetry
  - Radial symmetry
  - Heterotrophic
  - Vertebrae

32. Organisms in this phylum possess traits 1, 2, and 3.

- a. Echinoderms
- b. Round worms
- c. Flatworms
- d. Mollusks

33. Within the phylogenetic tree shown above, one group of animals has the following characteristics: Dorsal Nerve Cord; Coelomate; Bilateral symmetry. Which group contains the traits listed above?

- a. Jellyfish
- b. Mollusks
- c. Chordates
- d. Round worms



34. Which type of symmetry represented in the illustration?

- a. Bilateral
- b. Circular
- c. Radial
- d. Longitudinal

35. The animal kingdom is broken down into phyla based on symmetry and what other trait?

- a. Body size
- b. Presence of mitochondria
- c. Heterotrophic vs. autotrophic
- d. Type of body cavity

36. Which of the following correctly pairs the type of body cavity with its definition?

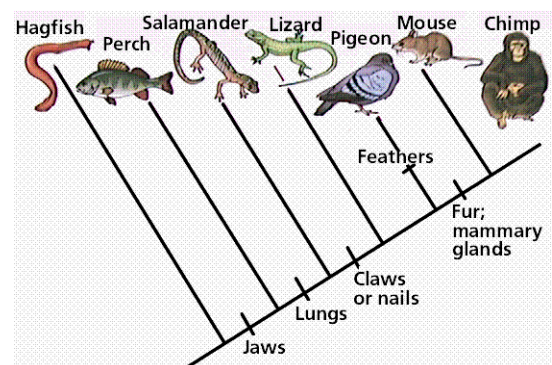
- a. Coelomate: possessing a partially lined body cavity
- b. Acoelomate: possessing a body cavity with no lining
- c. Pseudocoelomate: possessing a fully lined body cavity
- d. Pseudocoelomate: possessing a body cavity with no lining

37. Which of the following describes the body plan of a domestic dog?

- a. Radially symmetric coelomate
- b. Radially symmetric pseudocoelomate
- c. Bilaterally symmetric coelomate
- d. Bilaterally symmetric pseudocoelomate

38. Which of the following traits do chimpanzees and perch have in common?

- a. Lungs, claws/nails, fur
- b. Jaws, lungs
- c. Jaws
- d. Jaws, lungs, feathers, claws/nails





39. Which of the following traits do chimpanzees and pigeons have in common?

- a. Lungs, claws, fur
- b. Jaws, lungs
- c. Fur, mammary glands
- d. Jaws, lungs, claws/nails

40. Which of the following traits do lizards and salamanders have in common?

- a. Lungs, claws, fur
- b. Jaws, lungs
- c. Jaws
- d. Jaws, lungs, feathers, claws

**Answer Key**

<b>Question #</b>	<b>Correct response</b>		<b>Question #</b>	<b>Correct response</b>
1	D		21	C
2	D		22	D
3	A		23	B
4	C		24	C
5	B		25	C
6	D		26	A
7	A		27	A
8	B		28	C
9	A		29	C
10	C		30	B
11	C		31	A
12	A		32	D
13	A		33	C
14	A		34	C
15	C		35	D
16	A		36	B
17	B		37	C
18	C		38	C
19	D		39	D
20	B		40	B