

AP: CHAPTER 18: the Genetics of VIRUSES p328-340

1. What makes microbes good models to study molecular mechanisms? _____

2. How were viruses first discovered? _____

3. What are the two basic components of viruses? _____

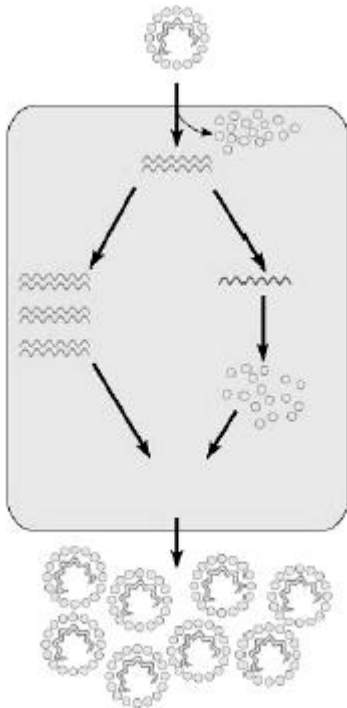
4. What is a bacteriophage? _____

5. List several characteristics of viruses. _____

6. Why do viruses infect only specific host cells? _____

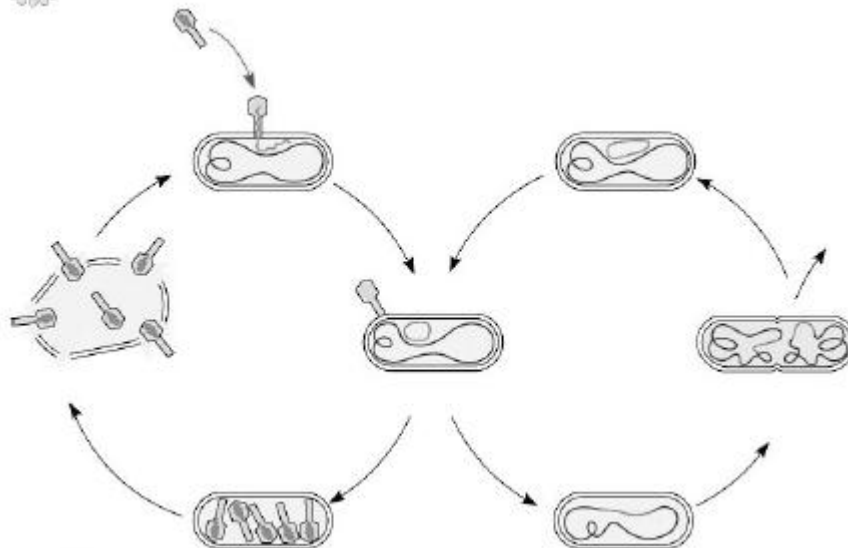
List a few examples: _____

7. Use the diagram to help explain typical viral reproduction.



8. Describe several defenses bacteria have against phage infection. _____

9 Use the diagram below to describe how the lytic and lysogenic cycles compare.



10. What is the role of the viral envelope? _____

11. Describe how viruses are classified. _____

12. Use the diagram at the right, label each RNA strand as either viral genome ssRNA or viral mRNA.

13. How are the genomes of various ssRNA viruses used differently by the host cells? _____

Which need viral enzymes? _____

13. What is reverse transcriptase? _____

14. Describe the life cycle of the HIV virus.
 Use the diagram at the right to label the components of HIV. On the life cycle label when DNA polymerase (host), RNA polymerase (host), and reverse transcriptase (viral) are used. Label the provirus

15. Explain how viruses may cause disease symptoms _____

16. What is a vaccine how is it useful? _____

17. Where do emerging viruses come from? _____

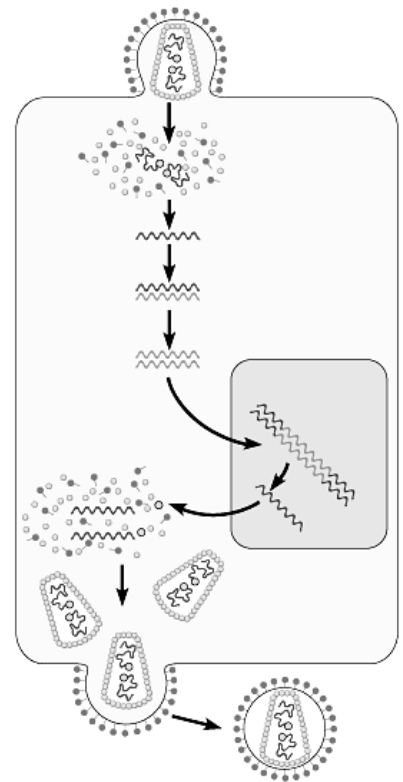
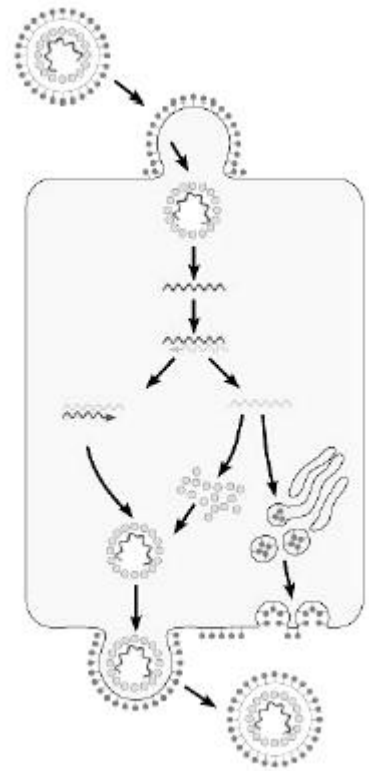
18. How might viruses be a step in triggering cancer?

(You may need to use Ch 19) _____

19. Why are viroids and prions of interest? What are they? _____

20. What is the current hypothesis for how viruses originated? _____

What evidence supports this? _____



CHAPTER 27 PROKARYOTES

1. Describe how common prokaryotes are on earth. _____

2. How do/have prokaryotes impacted earth? _____

3. Name the traditional 5 kingdoms of classification. _____

How has this changed and why? _____

4. How do bacterial cell walls differ from plant cell walls? _____

5. How does the cell wall aid in classifying the bacteria? _____

6. Describe the purpose of the bacterial pili and capsule. _____

7. What are the similarities and differences between prokaryotic and eukaryotic flagella? _____

8. Give an example if a stimulus and describe how bacteria react to that stimulus (taxis). _____

9. How have prokaryotes made up for their lack cellular organelles? _____

10. How do bacteria typically reproduce? _____

11. How does the genome of prokaryotes differ from eukaryotes? _____

12. List three methods that can modify bacteria genetically.

a. _____

b. _____

c. _____

13. What is the major source of genetic variation in bacteria? _____ Eukaryotes? _____

14. What is the function of endospores? _____

15. What is the natural source of antibiotics? How exactly do antibiotics affect bacteria? _____

16. Identify and briefly define the four nutritional categories of bacteria.

- a. _____
- b. _____
- c. _____
- d. _____

17. Define saprobe and parasite. _____

18. Define nonbiodegradable _____

19. What nutrient cycle would stop without prokaryotes? _____

20. What is nitrogen fixation? _____

21. Define the following metabolic variations among prokaryotes:

obligate aerobe _____

facultative anaerobe _____

obligate anaerobe _____

22. What evidence was used to classify prokaryotes into two domains? _____

23. Describe the following types of archea:

methanogens _____

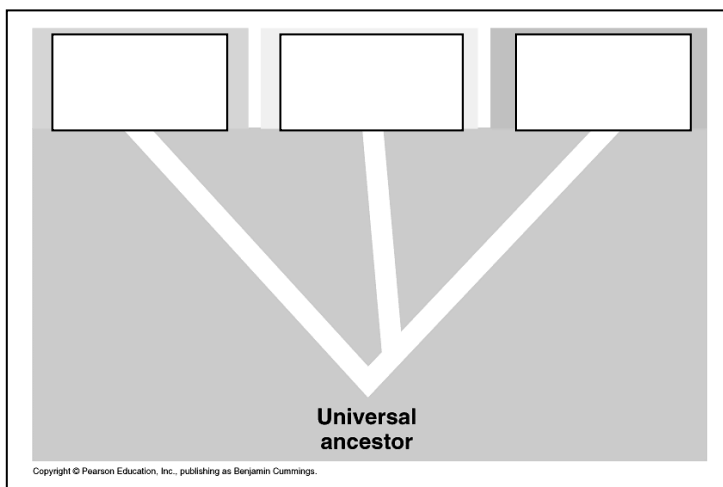
extreme halophiles _____

extreme thromophiles _____

24. Label the diagram below with the three domains of life.

25. Describe the ecological significance of prokaryotes _____

26. Describe several diseases caused by prokaryotes _____



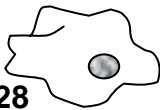
27. How have humans put bacteria to use? _____

28. Outline the key characteristics that distinguish the three domains. Include examples of organisms in each domain.

DOMAIN	CHARACTERISICS	EXAMPLE

28. Outline the key characteristics that distinguish the three domains. Include examples of organisms in each domain.

DOMAIN	CHARACTERISICS	EXAMPLE



CHAPTER 28

Name _____ Per_

1. Why are Protists said to be the most diverse of all eukaryotes? _____

2. How can unicellular organisms be described as both simple and complex? _____

3. What is the “problem” with the kingdom protista? _____

4. Describe general modes of nutrition and motility, and habitats that exist among protists?

5. Describe the evidence that supports an endosymbiotic origin of chloroplasts and mitochondria.

6. What is secondary endosymbiosis and how is it significant?

7. Describe the following protists
Giardia _____

Euglena _____

Trypanosoma _____

Dinoflagellates _____

Plasmodium _____

Ciliates (*Paramecium*) _____

8. Describe the characteristics of
diatoms _____

golden algae _____

brown algae _____

Describe the analogous features between plants and large algae. _____

red algae _____

green algae _____

9. Describe the defining features of
amoeba _____

foraminiferans _____

radiolarians _____

slime molds _____

AP: CHAPTER 29: HOW PLANTS COLONIZED LAND

Name _____ Per _____

1. Chart the four phyla of the plant kingdom. Include common names of each, the approximate number of extant species, and the major characteristics.

- a. _____

- b. _____

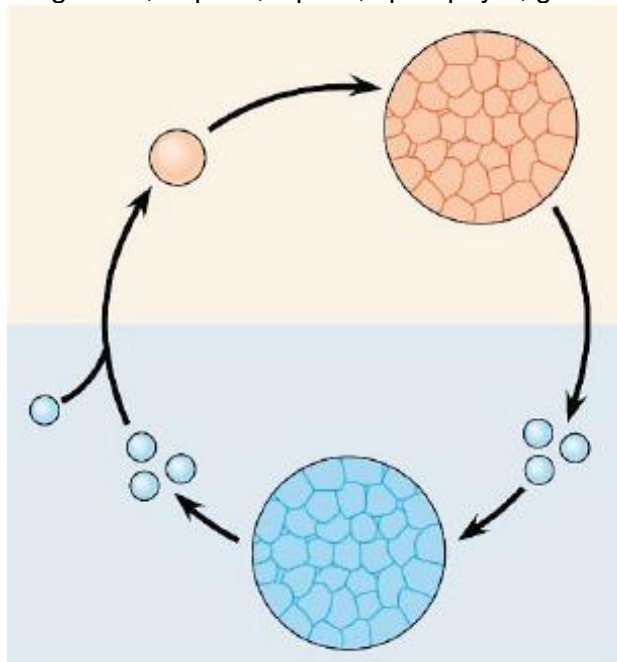
- c. _____

- d. _____

2. Describe the evidence linking plants to a charophycean ancestry. _____

3. Describe the derived traits (unique characteristics) that distinguish plants from charophyceans and facilitate life on land. _____

4. Label the generalized diagram of Alternation of Generations using the terms: mitosis, meiosis, fertilization, multicellular organism, haploid, diploid, sporophyte, gametophyte, spore, sperm, egg, zygote.



9. Describe the reduced gametophyte of seeded plants. Why hasn't it been eliminated? _____

10. What is a seed? What is its role? _____

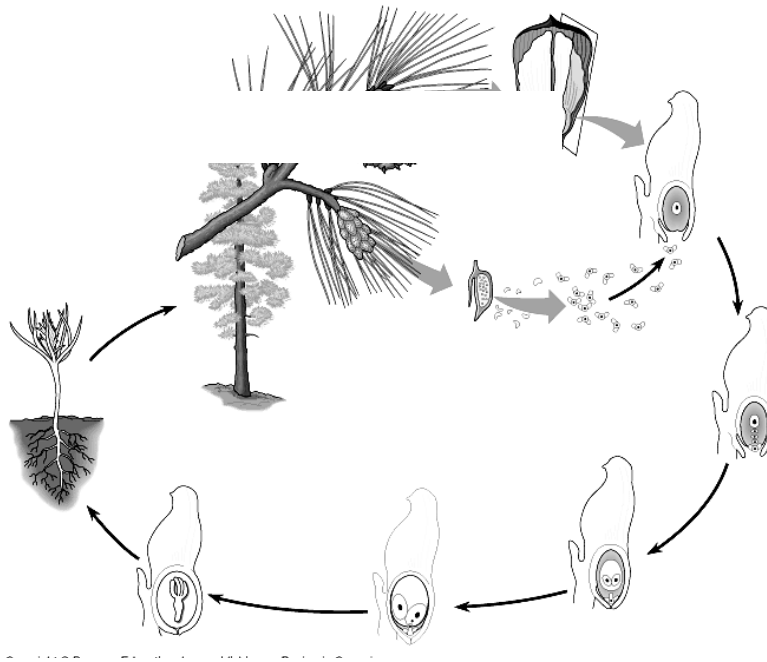
11. What is the advantage of pollen? _____

12. List the four phyla of gymnosperms. _____

Which is the most common? _____

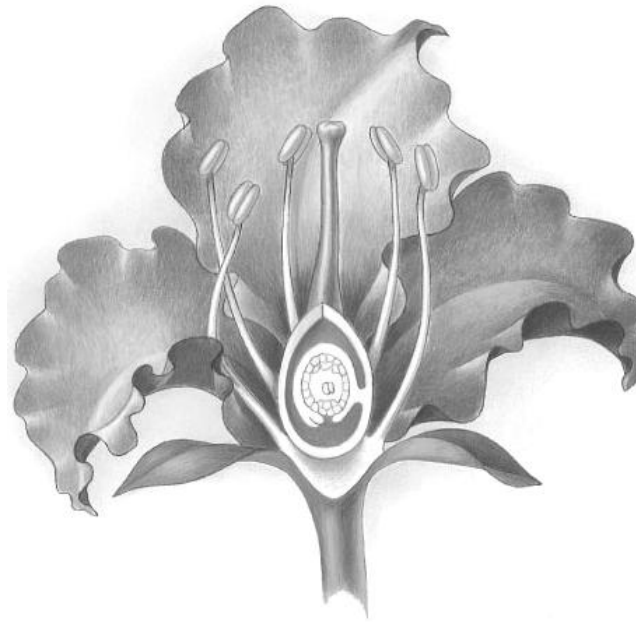
13. List several uses and adaptations of gymnosperms. _____

14. Label the structures and stages of the life cycle of a pine.



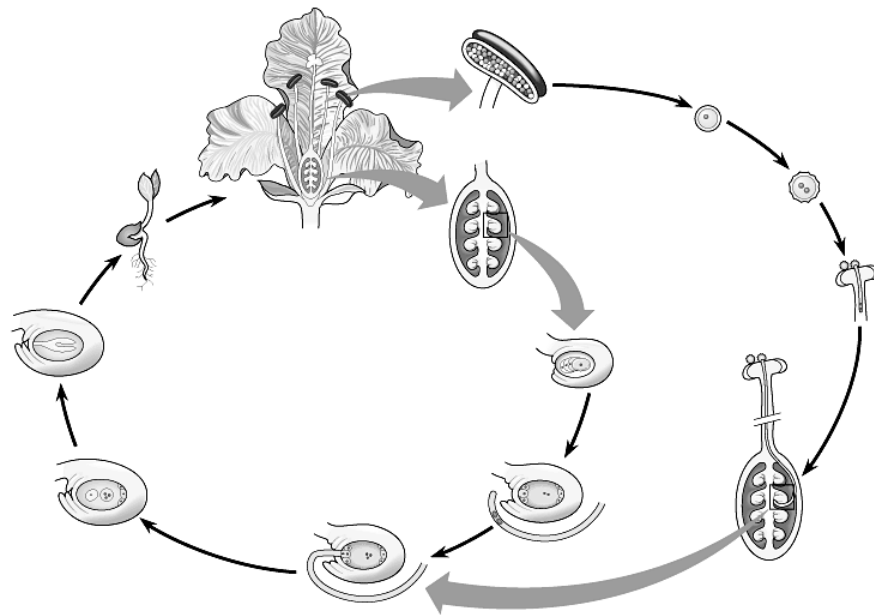
15. What evolutionary adaptations contributed to the success of angiosperms? Explain each.

16. Label the structures and functions of the parts of the flower.



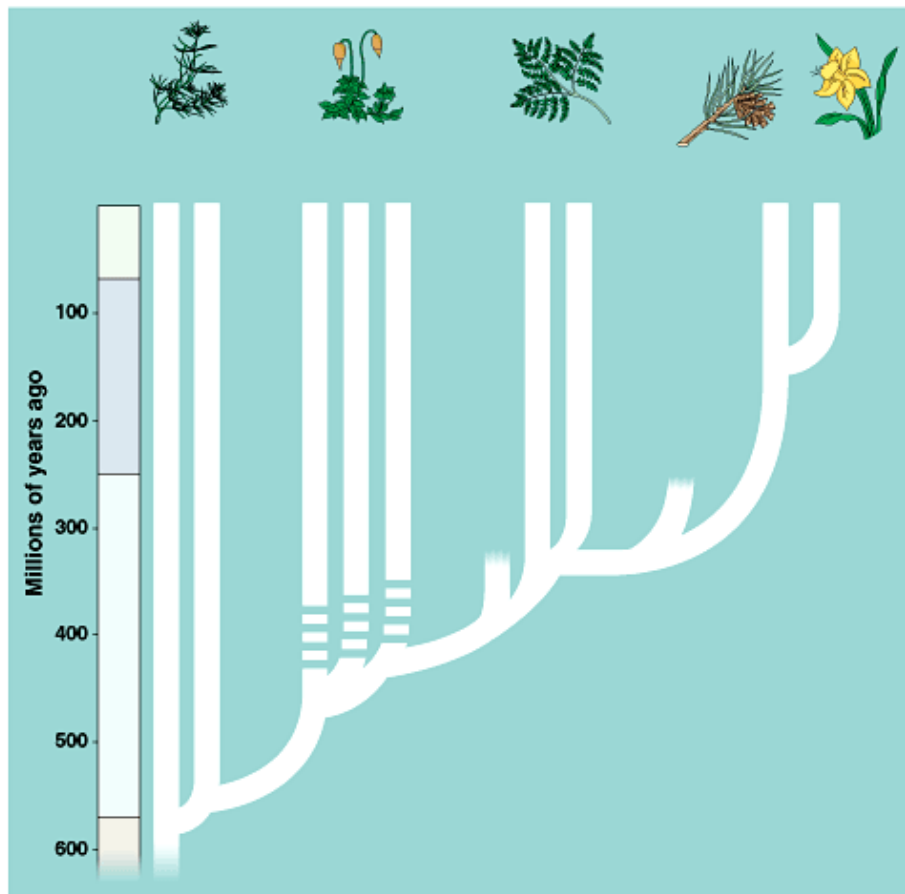
17. Describe double fertilization. What is its function? _____

18. Label the life cycle of the angiosperm.

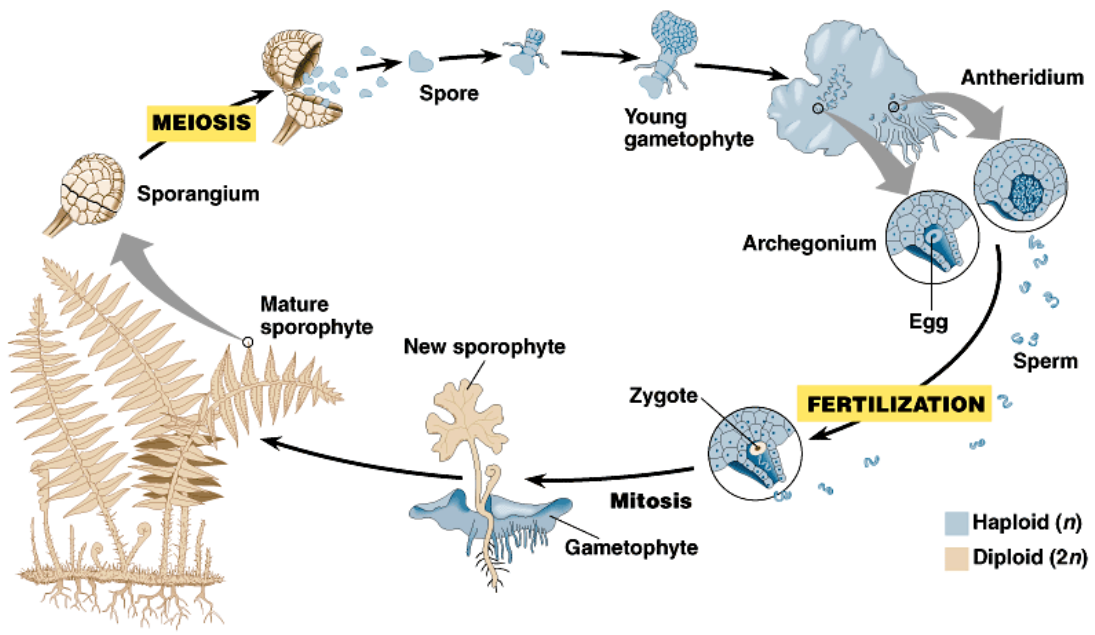


19. Describe and give an example of co-evolution. _____

20. What group of plants provides nearly all of our food? List several examples _____



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AP Biology Homework Due Wed March 22

1. Evolutionary tree of organisms we have studied.

- a. Draw an evolutionary tree that shows how bryophytes, angiosperms, bacteria, pterophytes, protists, archaea, and gymnosperms are related to a common ancestor.
- b. Give common names and illustrations of members of each group.
- c. On each branching point describe the derived characters unique to that clade.
- d. Describe the common ancestor.

2. Notes on Ch 32 Introduction to Animal Evolution

3.

CHAPTER 31 Objectives

Name _____ Per _____

1. Compare the nutritional mode of a fungus with your own nutritional mode. _____

2. Describe how the structure of a fungus is adapted to its nutritional mode. _____

3. Describe where fungi fit into the evolutionary tree we have studied so far. What supports this?

4. How do the cell walls of fungi differ from the cell walls of plants? _____

5. In general how do fungi disperse and reproduce? _____

6. Describe the rather unique feature(s) of fungal nuclei. _____

7. Fill in the diagram and chart on the back of this page

8. Describe the specialized ways of life of
Molds _____

Yeasts _____

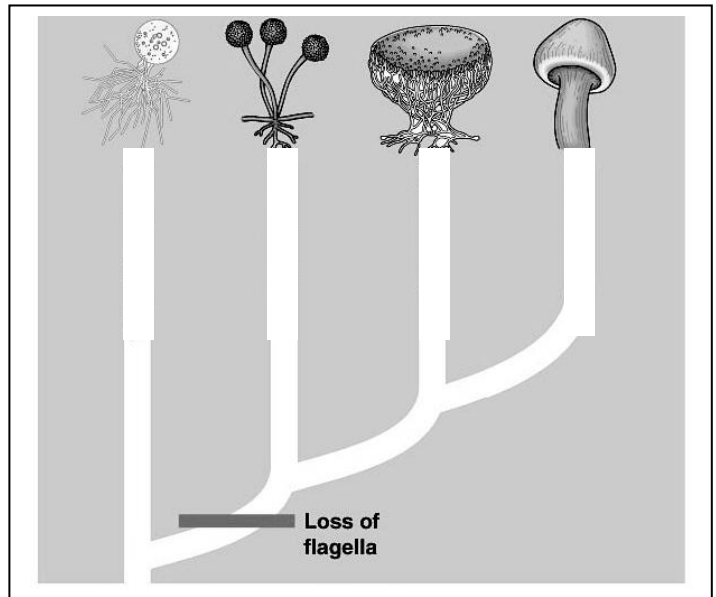
Lichens _____

Mycorrhizae _____

9. How do fungi contribute to an ecosystem? _____

10. Give some examples of how fungi are important to humans. _____

7. Name and describe the phyla of fungi.



PHYLA	CHARACTERISTICS	EXAMPLES

CHAPTER 32

1. Outline the major characteristics Campbell uses to define an animal. _____

2. Name and describe the ancestor of the animal kingdom _____

3. Describe a hypothesis for the origin of animals. _____

4. Describe the two forms of symmetry of the Eumetazoa. _____

5. What is the significance of cephalization as an evolutionary trend? _____

6. Name the three germ layers and the tissues and organs they form

7. How do the germ layers of Radiata and the other Eumetazoa differ? _____

8. Define the following terms and name representative organisms for each.

a. Acoelomates _____

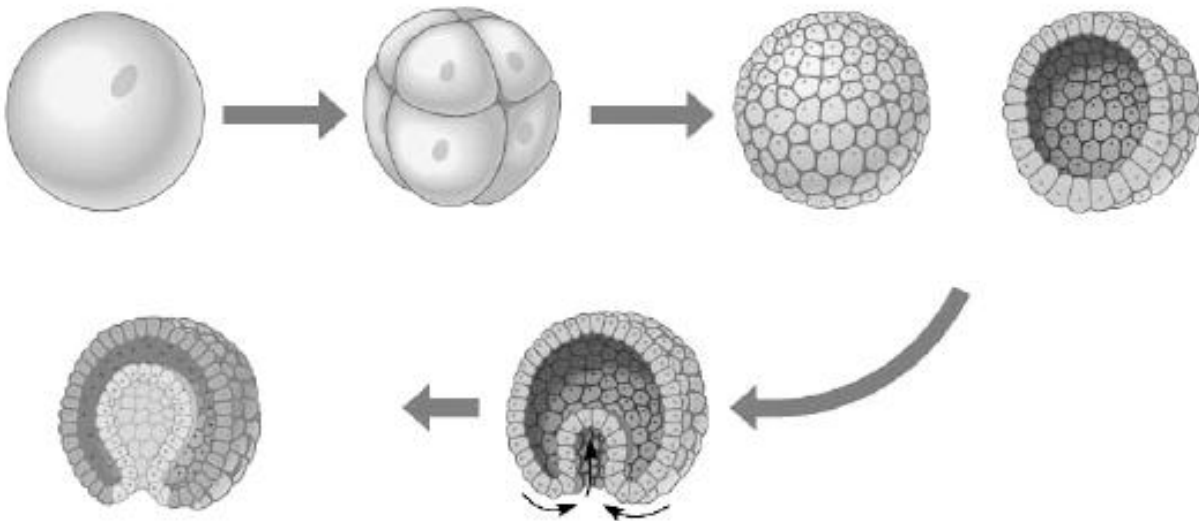
b. Pseudocoelomates _____

c. Coelomates _____

9. Fill in the table below comparing early development in protostomes and deuterostomes.

	Protostomes	Deuterostomes
Cleavage		
Cell determination		
Blastopore fate		
Coelom formation		

10. Label the stages and structures of the early embryonic development of an animal.



11. What was the Cambrian Explosion? In what ways is it significant? _____

12. What sparked the Cambrian Explosion? Describe the three main hypotheses. _____

13. What is "Evo-devo"? How is it significant? _____

9. Directions: Using the figure and information in the text, label the diagram and outline the key characteristics of each **branch of the Kingdom Animalia**. Use definitions from Question 6 to supply the details in your chart. Include examples of organisms in each division.

DIVISION	CHARACTERISTICS	EXAMPLE
1		
2		
3		
4		
5		
6		
7		

DIVISION	CHARACTERISTICS	EXAMPLE
8		
9		
10		
11		
12		
13		
14		
15		

CHAPTER 33 INVERTEBRATES Part I:

1. What is a unique characteristic common to sponges (Parazoa)? _____

2. How does the structure of a sponge relate to its method of nutrition? _____

3. All animals except sponges have _____

4. What is a unique characteristic common to the Cnidarians? Name several Cnidarians _____

5. What are the two forms of shape within the Cnidarians? _____

6. What are some evolutionary advancements we see in the animals beyond Cnidarians? _____

7. In what way are Platyhelminthes significant to humans? _____

8. What is unique in the structure and function of the Pseudocoelomates? _____

9. Define parthenogenesis. _____

10. Describe the unique characteristics of the Lophophorate phyla. _____

11. Describe the unique characteristics of Phyla Nemertea. _____

12. What are the three major body regions of a Mollusk? Describe each. Name several examples belonging to the Phyla Mollusca. _____

13. Describe the radula, mantle cavity and torsion present in many mollusks. _____

14. Name two evolutionary adaptations that are well developed in the Phyla Annelida. _____

CHAPTER 33 INVERTEBRATES Part II:

15. What is the evolutionary significance of the coelom as seen in the Annelids?

16. What is the importance of segmentation?

17. Name several sample organisms belonging to the phyla Annelida

18. What is unique among the ecdysozoa? Give examples of organisms belonging to this group.

19. How do nematodes differ from annelids?

20. List ways in which Nematodes impact earth/society.

21. Describe the unique characteristics of arthropods

22. Name the four main lineages of arthropods and sample organisms of each.

23. Identify characteristics that were most significant to Arthropod success.

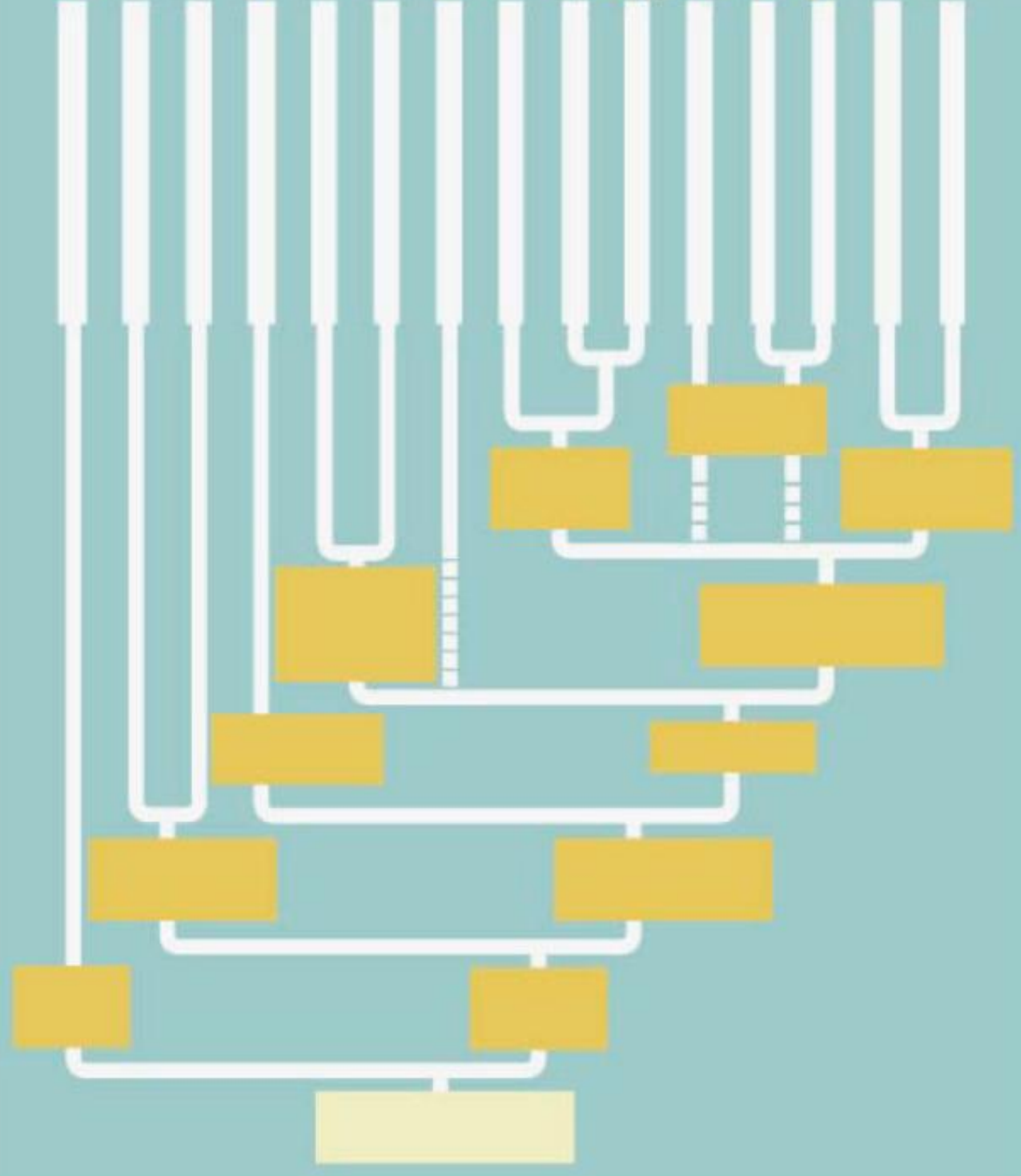
24. Describe the ecological impact of insects

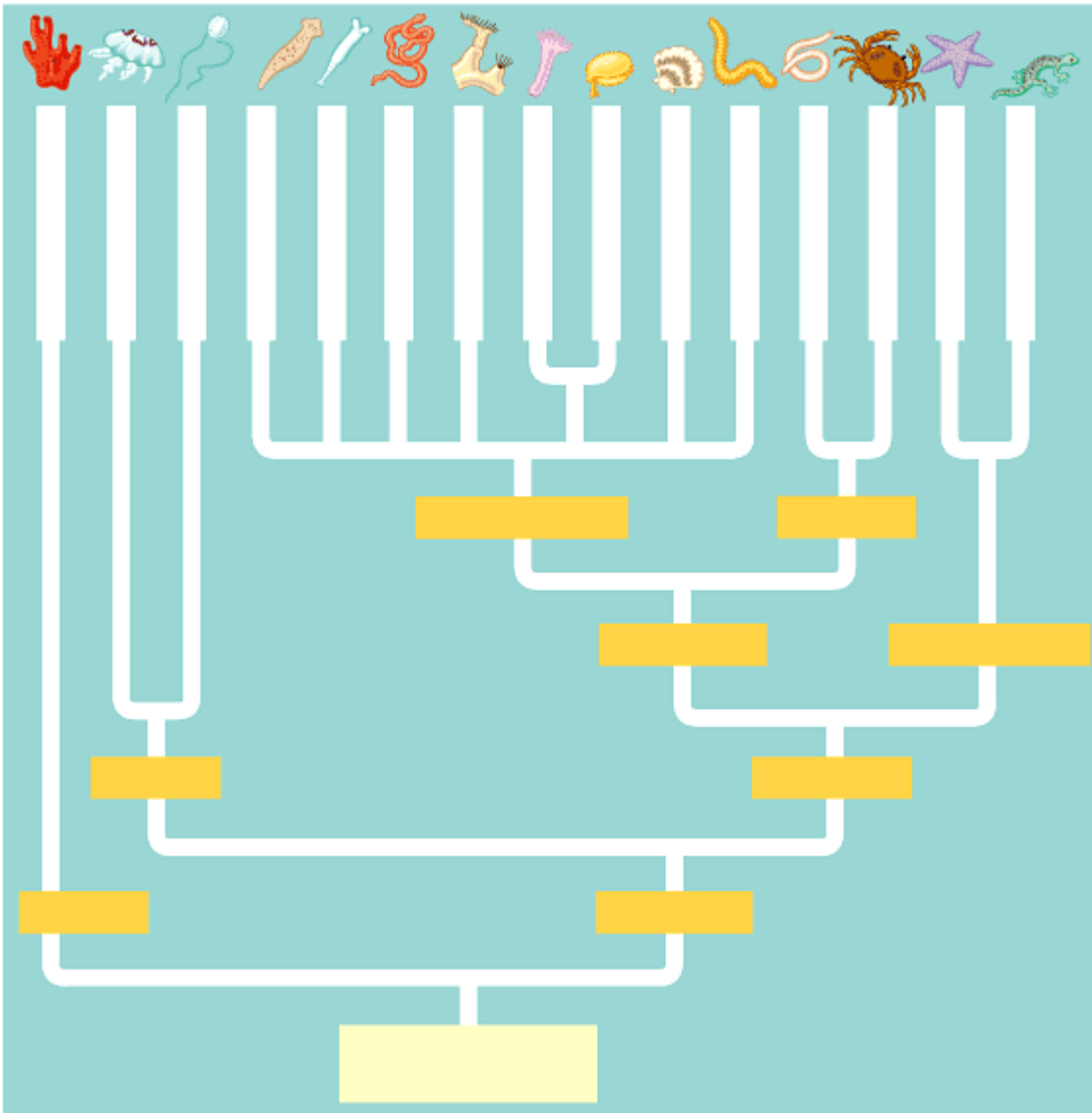
25. List common example organisms that could be classified as Coelomate Deuterostomes.

26. What features do deuterostomes share?

27. What traits are particularly unique to the Echinoderms?

28. List common examples that could be classified as Coelomate Protostomes.





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CHAPTER 34

PART 1. Directions: All answers are to be completed on your own and neatly written.

45. What are the four characteristics of the Chordates?

46. List and describe an example of an invertebrate chordate.

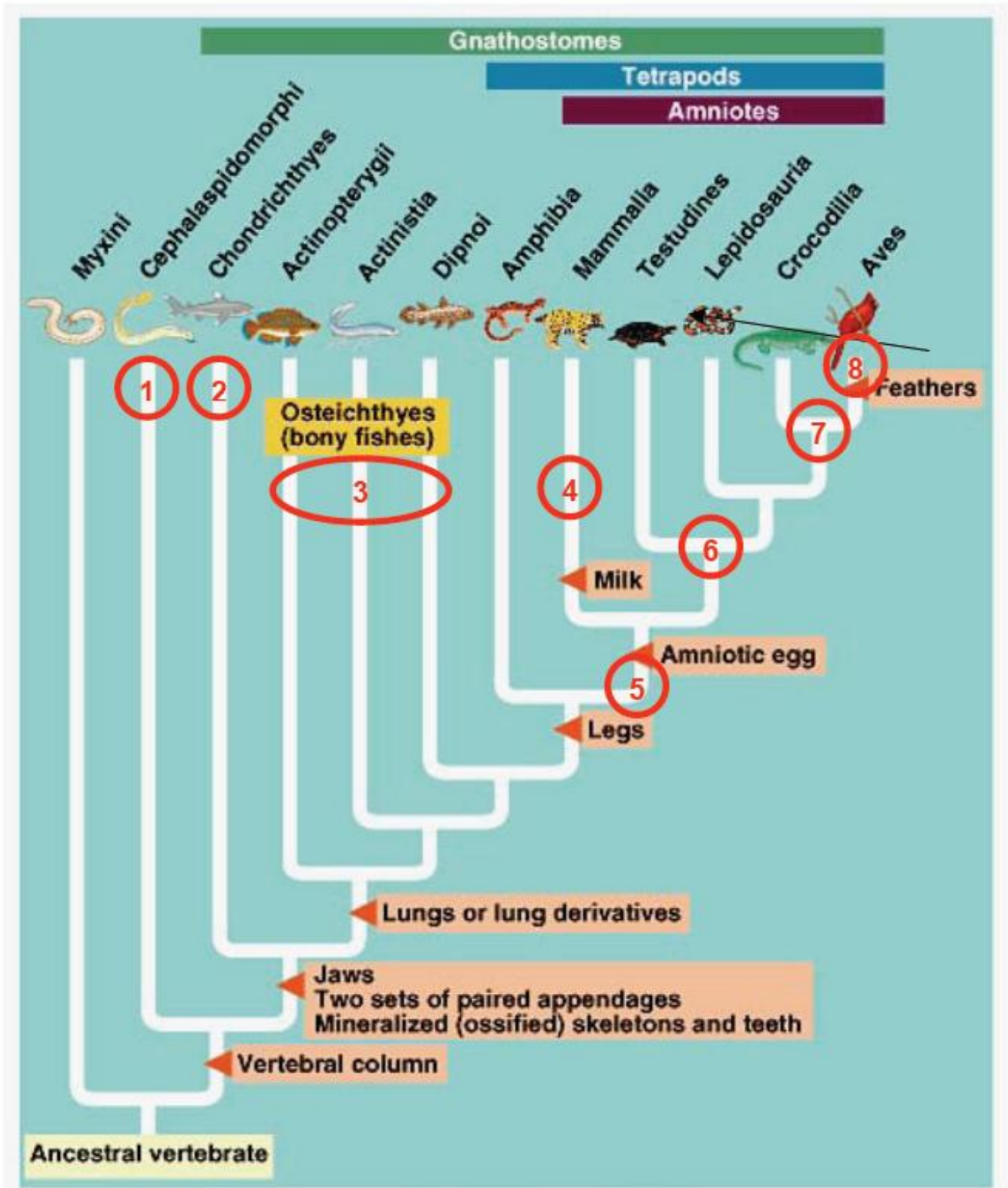
47. Define paedogenesis.

48. What characterizes the subphylum Vertebrata?

49. In the evolution of vertebrates, identify the significance of being tetrapod?

50. Identify the significance of the amniotic egg and the amniote?

PART 2. Directions: Using Table 34.1 on page 636 and the information in the text, outline the key characteristics that distinguish **the major branches of the subphylum Vertebrata** identified on the diagram. Include examples of organisms in each class.



CLASS	CHARACTERISTICS	EXAMPLE
1		
2		
3		
4		
5		
6		
7		
8		



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