

Worksheet: Fall Final Review

BIOLOGY: CHAPTERS 1-9

Directions: Answer the following questions using your notes and textbook (Chapters 1-9)

UNIT 1 (Introducing Biology)

1. Define the following terms:

a. **Hypothesis-**

b. **Theory-**

c. **Controlled experiment-**

d. **homeostasis-**

2. List the **characteristics of living things**

3. What are the **levels of organization** of living things?

4. Complete the table below describing the 4 types of **organic compounds**.

	Carbohydrates	Proteins	Lipids	Nucleic Acids
Monomer				
Polymer				
Importance to living things				

5. What type of organic compound is an **enzyme**?

6. Why are enzymes important to living things?

7. How does an **enzyme** speed up a chemical reaction?

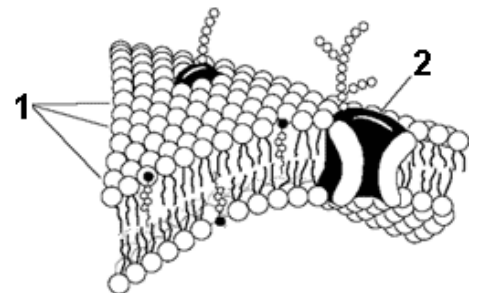
8. What is the difference between a **quantitative** and **qualitative observation**?

UNIT 2 (Cells)

9. Complete the table below by places a check mark for those that apply:

	Animal Cells	Plant Cells	Bacteria
Has nucleus			
Has cytoplasm			
Has mitochondria			
Has chloroplasts			
Eukaryotic cell			
Prokaryotic cell			

10. What chemical compounds make up the structures labeled 1 and 2 in the diagram to the right?



1-

2-

11. Complete the table below describing cell organelles:

Organelle	Function
Nucleus	
Ribosome	
Chloroplast	
Mitochondria	
Endoplasmic reticulum	
Golgi apparatus	
Lysosome	
Vacuole	

12. The cell membrane is referred to as **selectively (semi) permeable**. What does this mean?
13. What is the difference between **active transport** and **passive transport**?
14. What is **diffusion**?
15. What is **osmosis**?
16. How is the molecule **ATP** important to living things?
17. How does **ATP** release energy?
18. What is the equation for **photosynthesis**?
19. How is the equation for photosynthesis and cellular respiration related?
20. What provides the energy to drive the **light-dependent stage of photosynthesis**?
21. What is the correct sequence of events (stages) in **cellular respiration**? (Hint: there are 3)
22. Cellular respiration is considered an **aerobic** process whereas fermentation is considered **anaerobic**. What is the difference?
23. What are the two types of **Fermentation** (anaerobic respiration) and where do each occur?
24. What is glycolysis and what is the starting molecule for **glycolysis**?
25. How many molecules of ATP are produced by **glycolysis**?
26. How many molecules of ATP are produced overall in **cellular respiration**?
27. How many molecules of ATP are produced in **fermentation**?

28. The diagram to the right shows the two types of **cell division** in eukaryotic cells. What is the name of each

#1-

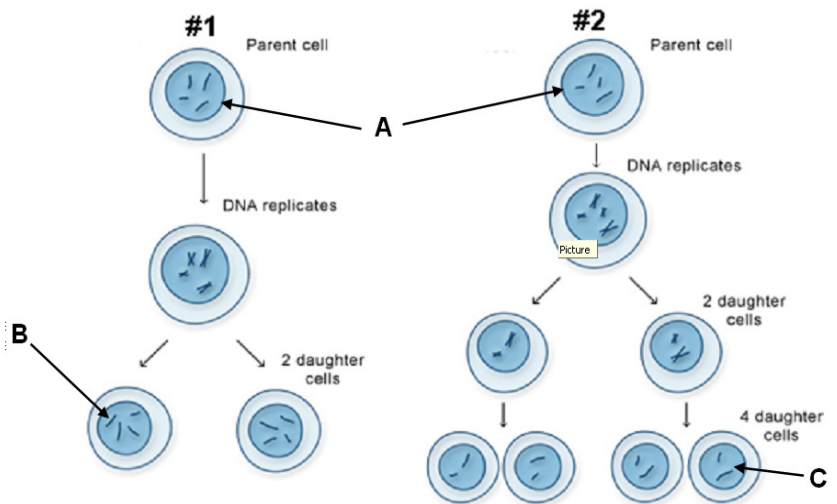
#2-

29. What is the **term** and **symbol** we use to describe the number of chromosomes in the nuclei labeled A, B, and C

A-

B-

C-



30. **Cancer** is a disorder in which some cells have lost the ability to control what?

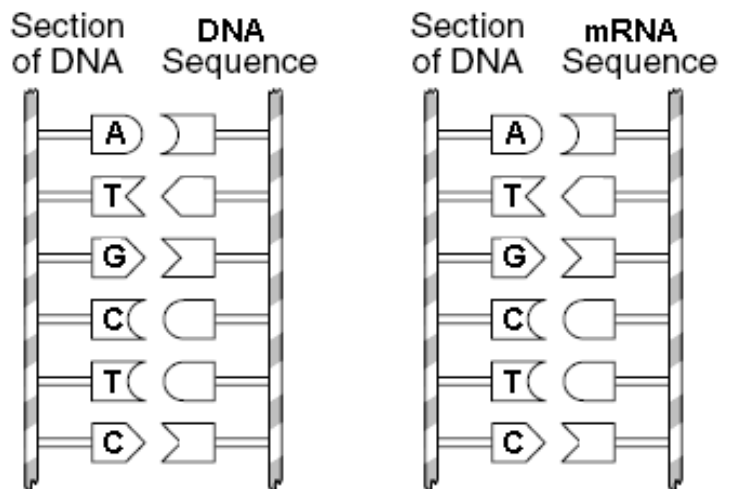
UNIT 3 (Genetics)

31. Complete the blanks in the diagram to the right showing the correct **complimentary bases**.

a. What is the name of the process taking place in the first diagram?

b. What is the name of the process taking place in the second diagram?

c. How many amino acids would be coded for in the second diagram?



32. Complete the chart below (meiosis, mitosis, fertilization)

Cellular process	Chromosome Number
	$n + n \rightarrow 2n$
	$2n \rightarrow n + n$
	$2n \rightarrow 2n$

33. Complete the table below describing different types of genetic crosses:

Type of genetic cross	Results of cross
	Red hair X White hair \rightarrow Red hair
	Red hair X White hair \rightarrow Red & White hair
	Red hair X White hair \rightarrow Pink hair