

**Part 1: Cell Structure**

1. Define each of the following terms:

a. Organelle

b. Nucleus

c. Nuclear membrane

d. DNA

e. Chromosome

f. Cell Membrane

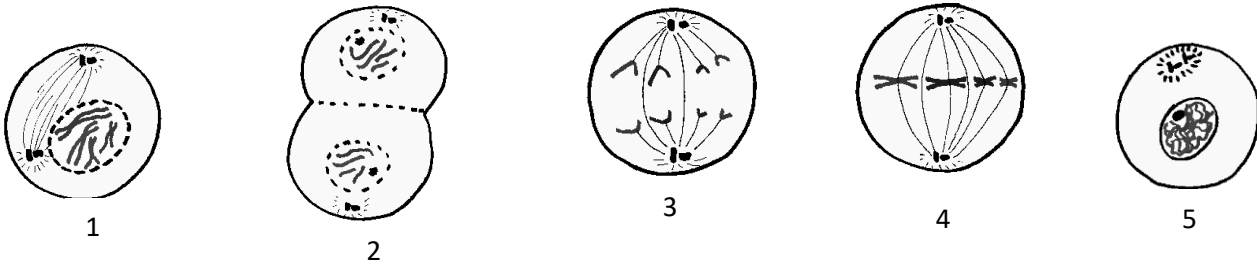
g. Cell Wall

2. What are the differences between plant and animal cells?

3. What are the 3 main reasons cells divide?

4. Identify the two main parts of the life cycle of a cell. Which is longer?

5. Match the number of each diagram with the correct phase in the chart below (they are not in order). Identify one major event in each stage.



Phase	Number (from diagram)	Major Event:
Interphase		
Prophase		
Metaphase		
Anaphase		
Telophase		

6. Why must the genetic material be duplicated before mitosis happens?

7. Define and give an example of an organism that reproduces by:

Type	Definition	Example
Budding		
Binary Fission		
Spore Formation		
Vegetative reproduction		
Fragmentation		

8. How do the cells formed in all types of asexual reproduction (mitosis, binary fission, budding, etc.) compare to the original cell? (ie. Are they genetically the same or different?)

9. Describe how Dolly was cloned.

10. Fill-in the following chart for an organism that has 42 chromosomes in its somatic (body) Cells

<b>Characteristic</b>	<b>Mitosis</b>	<b>Meiosis</b>
<b># of chromosomes (end result)</b>		
<b>Number of stages (steps)</b>		
<b>Type of cell that uses.....</b>		
<b>Type of reproduction that uses...</b>		
<b>1 Benefit of using each</b>		

11. Define:  
Cytokinesis: \_\_\_\_\_

Daughter Cells: \_\_\_\_\_

12. Fill in the chart:

<b>Cell Type</b>	<b>Proper Name</b>	<b>Produced by Mitosis or Meiosis?</b>	<b>Haploid or Diploid</b>	<b>Asexual or Sexual</b>
Body Cell				
Sex Cell				

13. What a:  
a. Zygote?

b. Embryo?

14. What are homologous chromosomes?

15. A Kangaroo has 16 chromosomes in its muscle cells. How many chromosomes would you find in its:

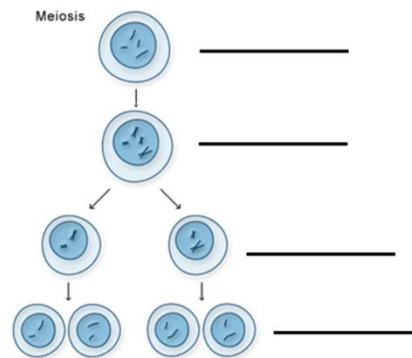
a. Brain Cell: \_\_\_\_\_

b. Egg cell: \_\_\_\_\_

c. Zygote: \_\_\_\_\_

d. Sperm Cell: \_\_\_\_\_

16. For the following diagram of **Meiosis**, label the cell at each step as either Haploid or Diploid.



17. Fill in the chart regarding advantages and disadvantages of sexual and asexual reproduction:

	<b>Advantages</b>	<b>Disadvantages</b>
<b>Sexual Reproduction</b>		
<b>Asexual Reproduction</b>		

18. Explain why meiosis is necessary.

19. Describe the path of a sperm cell as it exits the male body – identify all major parts and glands.

20. Describe the path of a female egg cell as it exits the body. Identify all major parts.

21. Fill in the table below

	<b>Mitosis</b>	<b>Meiosis</b>
Type of Reproduction <b>(sexual or asexual)</b>		
Type of cells produced <b>(Somatic or Gametes)</b>		
Number of cells Produced		
Number of divisions		
How do daughter cells compare to mother cell? <b>(same or different)</b>		
Number of Chromosomes in Daughter cells <b>(haploid or diploid)</b>		

22. List the differences between sexual and asexual reproduction.

23. Where in the female reproductive system does fertilization take place?

24. Where in the female reproductive system does the zygote develop into a baby?

25. Identify the main male sex hormone. What are its main functions?

26. List the four (4) main female hormones. For each, describe their function, and where they are produced.

27. On the next pages, label the diagrams of the male and female reproductive systems.