Life Sciences 11

Name: \_\_\_\_\_\_\_\_\_\_KEY\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_

Mitosis Verses Meiosis

**Directions:** *Write answers next to the question. Draw pictures on the back of this page, in order.*

Page 246 (mitosis) of your textbook and page 276 (meiosis) might be a good place to start!

1. Describe the purpose of mitosis \_\_\_\_growth and repair\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. How many times does the cell divide during mitosis? \_\_\_\_\_\_\_\_\_once\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. What kind of cells are produced at the end of mitosis? \_\_\_\_\_\_\_identical diploid cells\_\_\_\_

4. What are sister chromatids? \_\_\_\_\_\_\_\_\_\_identical copies of DNA\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. Briefly describe what happens during prophase: \_\_\_\_\_\_\_DNA condenses, spindle fibres form from centriole, nuclear membrane dissolves\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. Draw and label picture of what a cell looks like during prophase. *Draw on the back of page.*

7. Briefly describe what happens during metaphase \_\_sister chromatids meet in the middle\_\_

8. Draw and label a picture of what a cell looks like during metaphase. *Draw on the back of page.*

9. Briefly describe what happens during anaphase \_\_sister chromatids separate – move to opposite sides of cell\_

10. Draw and label a picture of what a cell looks like during anaphase. *Draw on the back of page.*

11. Briefly describe what happens during telophase \_\_\_\_nuclear membrane regrows around the DNA – two nuclei in one cell\_\_\_\_\_\_\_\_\_

12. Draw and label a picture of what a cell looks like during telophase. *Draw on the back of page.*

13. Is cytokinesis part of mitosis \_\_\_\_\_\_\_\_\_No. After mitosis. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

14. Briefly describe what happens during cytokinesis \_\_\_Splits the cell in two.\_\_\_\_\_\_\_\_\_\_\_

15. Draw a picture of what a cell looks like during cytokinesis. *Draw on the back of page.*

16. Describe the purpose of meiosis \_\_\_\_\_\_Produce gametes – sperm & egg\_\_\_\_\_\_\_\_\_\_\_\_

17. How many times does the cell divide during Meiosis? \_\_\_\_\_\_\_2 Times\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

18. What kind of cells are produced at the end of meiosis? \_\_\_\_\_\_Haploid gametes\_\_\_\_\_\_\_\_

19. Briefly describe the difference of prophase I & II. \_\_homologous pairs (tetrads of sister chromatids) connected in one cell vs sister chromatids connected in two cells\_\_\_\_\_\_\_

20. Draw and label a picture of prophase I & II. *Draw on the back of page.*

21. Briefly describe the difference of metaphase I & II. \_\_\_\_\_chromosomes line up double file with homologous pair in one cell vs line up single file with sister chromatids in two cells\_\_\_

22. Draw and label a picture of metaphase I & II. *Draw on the back of page*.

23. Briefly describe the difference of anaphase I & II. \_\_homologous pairs separate in one cell vs sister chromatids separate in two cells\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

24. Draw and label a picture of anaphase I & II. *Draw on the back of page.*

25. Briefly describe the difference of telophase I & II. \_\_one cell with two nuclei surrounding duplicated chromosomes vs two cells with two nuclei each around single chromosomes\_\_\_\_

26. Draw and label a picture of telophase I & II. *Draw on the back of page.*

**Mitosis**

Prophase

Metaphase

Anaphase

Telophase

Cytokinesis

**Meiosis I**

Prophase I

Metaphase I

Anaphase I

Telophase I

Cytokinesis

**Meiosis II**

Prophase II

Metaphase II

Anaphase II

Telophase II

Cytokinesis