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## Bio K/H Unit 3 Review: DNA Replication \& Cell Cycle

1. When DNA replicates, where does the DNA molecule separate?
2. How is diversity helpful in a bacterial population?
3. What biomolecule is DNA?
4. Name the 3 parts of a nucleotide.
5. What is binary fission?
6. What is the complementary strand of GATCCA?
7. What is the end result of replication? Describe the strands.
8. What is the function of DNA helicase and DNA polymerase?
9. Prokaryotic, asexual reproduction is called $\qquad$ _.
10. What are some advantages and disadvantages of Asexual Reproduction?
11. What percentage of Thymine's should be in a DNA strand if there are $45 \%$ Guanine's?
12. Name the 4 DNA bases, and how they pair up together.
13. Eukaryotic, asexual reproduction is called $\qquad$ .
14. What is DNA Replication?
15. Describe cell specialization.
16. All multi-celled organisms have a complete set of $\qquad$ in their cells.
17. Draw and describe what happens in:
-Interphase (*Be sure to include G1, S, \& G2*)
-Prophase
-Metaphase
-Telophase

## -Cytokinesis

18. What are sister chromatids held together by?
19. Name the 4 stages of Mitosis.
20. In which phase of Interphase does the DNA replicate?
21. What are the role of spindle fibers in the cell cycle?
22. Name 3 problems that cells have as they grow larger.
23. As the $1 \mathrm{~cm} \neg 3$ cell increases in volume, the surface area/volume ratio $\qquad$ (increases or decreases).

| Cell Size |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Surface Area |  |  |  |
| Volume |  |  |  |
| Surface Area To Volume <br> Ratio |  |  |  |

## Formulas

Surface Area:
Length $\times$ Width $\times 6$ sides

Volume:
Length x Width x Height

Surface Area/Volume Ratio: Surface Area / Volume
24. What are cyclins?
25. When cells come into contact with one another, what (generally) happens?
26. What is the p53 gene?
27. What is cancer?
28. How does cancer affect the cell cycle?
29. Name 2 examples of regulators and what each does.
30. If the initial parent cell has 30 chromosomes in it, how many chromosomes will be in each resulting daughter cell at the end of the cell cycle?

