Biology Review

|  |  |  |
| --- | --- | --- |
| 1. gene
2. chromosome
3. DNA
4. enzyme
5. photosynthesis
6. nucleus
7. mitochondria
8. ribosome
9. cytoplasm
10. selectively permeable
11. bacteria
12. virus
13. sexual reproduction
14. asexual reproduction
15. meiosis
16. gamete
17. zygote
18. mitosis
19. fertilization
20. cancer
21. diploid
22. haploid
23. cytokinesis
24. hereditary
25. genetics
26. trait
 | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Smallest and simplest form of life (single cell without nucleus)The “powerhouse” of cellAllows some molecules to pass through but not othersControl center of the cellLack most of the characteristics of living things Protein that speeds up a chemical reactionMaterial in which nucleus and organelles are suspendedSection of DNA molecule that codes for a specific enzymeTakes place in chloroplastsProtein factory of the cellMolecule that contains genetic instructions for the cellA structure in the nucleus that contains genesCombining of a male and female reproductive cellNew cell that results from the fertilization of an eggHaving pairs of homologous chromosomesSpecial cell for reproductionSeparation of paired chromatids into two identical sets Process producing specialized reproductive cellsA group of cells that don’t reproduce properlyHaving only one chromosome of each typeProcess in which cytoplasm divides into 2 roughly equal halvesProduction of offspring from a single parentReproduction that requires two parentsThe study of heredityHaving different alleles for a particular genePassing on of characteristics from parents to offspring |

1. The three main functions of cell division are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_
2. For each of the following parts, describe location and function:

|  |  |  |
| --- | --- | --- |
| **Structure** | **Location** | **Function** |
| Nuclear membrane |  |  |
| Chromosomes |  |  |
| Nucleolus |  |  |
| ribosomes |  |  |
| Endoplasmic Reticulum (ER) |  |  |
| Centrioles |  |  |

1. What are the 4 bases that make up DNA: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. What are the 3 parts of DNA: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. List the 6 parts of the cell cycle in order: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. What 2 things happen during interphase: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Label the stages of Mitosis below.



\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_

1. How is cytokinesis different in plants and animals? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What is the main difference between asexual and sexual reproduction? \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. For each method of asexual reproduction, define and give an example.

|  |  |  |
| --- | --- | --- |
| **Method** | **Definition** | **Example** |
| Binary Fission |  |  |
| Budding |  |  |
| Vegetative Reproduction |  |  |
| Fragmentation |  |  |
| SporeFormation |  |  |

1. A cell that is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ contains the normal number of chromosomes. These cells are sometimes referred to as \_\_\_\_\_\_\_\_\_\_\_\_ or body cells. In humans there are \_\_\_\_\_ chromosomes in one of these cells. A cell that is \_\_\_\_\_\_\_\_\_\_\_\_\_ contains \_\_\_\_\_\_\_\_\_\_\_\_\_ the normal number of chromosomes. These cells are sometimes referred to as \_\_\_\_\_\_\_\_\_\_\_\_\_\_ or sex cells. In humans, there are \_\_\_\_ chromosomes in one of these cells.
2. Meiosis consists of \_\_\_\_\_ phases: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. At the end of the 1st phase, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ have been separated. At the end of the 2nd phase, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ have been separated. The result of meiosis is \_\_\_\_ cells with \_\_\_\_\_\_ the normal number of chromosomes.
4. The advantage of sexual reproduction is that it increases the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ among organisms.
5. Copy Table 1 (p. 81)

|  |  |  |
| --- | --- | --- |
| **Feature** | **Asexual Reproduction** | **Sexual Reproduction** |
| # of parents |  |  |
| # of offspring |  |  |
| Variety of offspring |  |  |
| Speed of reproduction |  |  |
| Timing |  |  |

1. For each method of sexual reproduction, define and give an example.

|  |  |  |
| --- | --- | --- |
| **Method** | **Definition** | **Example** |
| Conjugation |  |  |
| Hermaphrodites |  |  |
| Flowering Plants |  |  |

1. Label the stage of Meiosis that is occurring. Be specific. **NOTE**: diagrams are **not** in order. (6)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Number the steps in the correct order of Meiosis. (5)
\_\_\_\_ homologous chromosomes pair up and line up in the middle of the cell
\_\_\_\_ chromosomes thicken and coil up
\_\_\_\_ cell divides into 2 cells
\_\_\_\_ 4 haploid cells are formed
\_\_\_\_ chromatids separate and move to ends of cell
3. Meiosis or Mitosis? Fill in the blank. (5)
\_\_\_\_\_\_\_\_\_\_\_\_\_ Produces 4 daughter cells.
\_\_\_\_\_\_\_\_\_\_\_\_\_ Division that produces egg and sperm cells
\_\_\_\_\_\_\_\_\_\_\_\_\_ Produces cells with the same number of chromosomes as the original cell

\_\_\_\_\_\_\_\_\_\_\_\_\_ Produces cells that are clones of the original cell
\_\_\_\_\_\_\_\_\_\_\_\_\_ Produces cells with half the number of chromosomes as the original cell