

Chapter:2 From a Cell to an Organism
Lesson:1 The Cell Cycle and Cell Division
Page:15-19

1.State How many sets of chromosomes are in a nucleus?(Circle the answer)

As stated under What are the characteristics of interphase sentence 3, ~~it stated~~ ,Recall that there are two sets of chromosomes in a nucleus. (Page 16)

2.Highlight the stage of the cell cycle during which organelle replication takes place.

As stated under What happens during the G2 stage under sentence 2, ~~it stated~~ Cells also replicate organelles during this stage. Some organelles can replicate themselves because they contain their own DNA. (Page 16)

3.Explain how do multicellular organisms grow?

As stated under Why are mitosis and cell division important under sentence 1, ~~it states that~~ Multicellular organisms grow by making more cells and replacing cells that die. (Page 17)

4.Identify what is the third phase of mitosis?

As stated under What are the phase of mitosis under sentence 10, ~~it stated~~ The next phase of mitosis , Anaphase, is when the sister chromatids of each replicated chromosome begin to separate.

In sentence 11 it also stated, Hairlike fibers extend from each end of a cell and attach to the centromere of the sister chromatids. In sentence 12 it also stated, The fibers pull the centromere apart. In sentence 13 it stated, The chromatids move from each other toward opposite ends of the cell. In sentence 14 it stated, The chromatids are then called chromosomes.(page 17)

5.Describe what happens during metaphase?

As stated under What are the phases of mitosis in sentence 7, During the second phase of mitosis, called metaphase, the replicated chromosomes ~~movemoves~~ to the middle of the cell . In sentence 8, it is stated, ~~T~~he pairs of sister chromatids line up end to end across the center of the cell. Sentence 9 stated, This happens because hairlike fibers pull and push the chromosomes to the middle of the cell. (Page17)

6.Define what are daughter cells?

As stated under What is cytokinesis sentence 2, ~~it is stated~~ during cytokinesis, the cytoplasm and its components divide to form two identical cells called daughter cells. Sentence 6 states, During cytokinesis, each daughter cell receives half the cytoplasm. Sentence 7 also stated, The cytoplasm contains organelles that were replicated during the G2 stage of interphase. (Page 18)

7.Explain what happens to the parent cell of an organism after mitosis and cell division?

Commented [1]: You wrote more than you needed here, but still, good job!

As stated under What is the result of cell division in sentence 1, After mitosis and cell division, the original cell called the parent cell no longer exists. Sentence 2 stated, however, the chromosomes of the daughter cells are identical to those of the parent cell. Sentence 3 states, that means the daughter cells are genetically identical to each other and to the original parent cell. Sentence 4 states, because of mitosis and cytokinesis, all the cells in your body, except sperm and egg cells, have identical ~~chromosomes~~chromosome.(page 19)

8. Estimate approximately how much of the cell cycle is interphase?

I estimated about 55 percent because on the cell cycle picture, dna is copied,chromosomes duplicate. (page 19)

Commented [2]: Good estimate. According to this literature, it states: The percentages of cells in each population represent the percent of the cell cycle a given cell spends in each phase, so it spends about 10-20% of its time in mitosis and 80-90% in interphase.

http://sites.fas.harvard.edu/~bs11/Lec/31_Cell_Cycle_I.pdf