

5 Chromosomes and mitosis – Part 1

—Answers

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Work through these after trying the questions yourself.

5.1 Histones.

5.2 (a) sister chromatids \ (b) the centromere.

5.3 interphase → mitosis → cytokinesis.

5.4 Interphase (the S phase).

5.5 A little DNA is lost from the ends at each division. Because the telomeres (which carry no genes) are shortened instead, no important genes are lost.

5.6 An unspecialised cell that can keep dividing by mitosis and can differentiate into different specialised cell types.

5.7 A little telomere is lost at every division. After many divisions the telomeres become too short to protect the gene-carrying DNA, so the cell can no longer divide safely and division stops.