

Chapter – 10 | Cell Cycle and Cell Division

QUIZ-01

1. The sequence of events by which a cell duplicates its genome and divides into two daughter cells is called:

A. Meiosis
B. Cell cycle
C. Cytokinesis
D. Karyokinesis (B)

Explanation : Cell cycle includes DNA replication, cell growth and final division into two daughter cells.

2. In a typical human cell cycle of 24 hours, actual cell division lasts for about:

A. 1 hour
B. 6 hours
C. 12 hours
D. 20 hours (A)

Explanation : In human cells, M phase or actual cell division lasts only about one hour.

3. DNA replication occurs during:

A. G₁ phase
B. S phase
C. G₂ phase
D. M phase (B)

Explanation : S phase is the synthesis phase during which DNA replication takes place.

4. During S phase, if DNA content is initially 2C, it becomes:

A. 1C
B. 2C
C. 4C
D. 8C (C)

Explanation : DNA amount doubles during S phase, but chromosome number remains the same.

5. Cells that stop dividing and enter an inactive stage are said to be in:

A. G₀ phase
B. S phase
C. M phase
D. G₂ phase (A)

Explanation : G₀ phase is the quiescent stage where cells remain metabolically active but do not divide.

6. Mitosis is called equational division because:

A. Chromosome number is reduced to half
B. Chromosome number remains same in daughter cells
C. Four haploid cells are formed
D. Homologous chromosomes pair (B)

Explanation : In mitosis, parent and daughter cells have the same chromosome number.

7. Chromosomes align at the equatorial plate during:

A. Prophase
B. Metaphase
C. Anaphase
D. Telophase (B)

Explanation : Metaphase is marked by the arrangement of chromosomes at the metaphase plate.

8. In plant cells, cytokinesis occurs by formation of:

A. Cleavage furrow
B. Cell plate
C. Spindle fibre
D. Chiasmata (B)

Explanation : Plant cells form a cell plate in the centre, which grows outward to form the new cell wall.

9. Crossing over occurs during which stage of meiosis?

A. Leptotene
B. Zygotene
C. Pachytene
D. Telophase I (C)

Explanation : Crossing over occurs during pachytene between non-sister chromatids of homologous chromosomes.

10. At the end of meiosis II, how many cells are formed?

A. Two diploid cells
B. Two haploid cells
C. Four haploid cells
D. Four diploid cells (C)

Explanation : Meiosis produces four haploid daughter cells after two successive divisions.