

Chapter – 10 | Cell Cycle and Cell Division

QUIZ
PART-05

1. Meiosis-II is similar to —

- A. Normal mitosis
- B. DNA replication
- C. G₀ phase
- D. Synapsis (A)

Explanation : Meiosis-II is equational division and resembles mitosis.

2. Meiosis-II is called equational division because —

- A. Chromosome number becomes half again
- B. No change occurs in chromosome number
- C. DNA replication occurs again
- D. Homologous chromosomes pair (B)

Explanation : In meiosis-II, sister chromatids separate, but chromosome number remains the same.

3. Nuclear membrane and nucleolus gradually disappear in —

- A. Prophase-II
- B. Telophase-II
- C. Interkinesis
- D. Anaphase-I (A)

Explanation : During prophase-II, nuclear membrane and nucleolus disappear and spindle formation begins.

4. In metaphase-II, chromosomes line up at the —

- A. Cell wall
- B. Equator
- C. Nucleolus
- D. Cytoplasm edge (B)

Explanation : In metaphase-II, chromosomes align on the equatorial plate.

5. In anaphase-II —

- A. Homologous chromosomes separate
- B. Sister chromatids separate
- C. Synapsis occurs
- D. Chiasmata form (B)

Explanation : Centromeres split and sister chromatids move to opposite poles in anaphase-II.

6. At the end of meiosis-II, how many haploid daughter cells are formed?

- A. Two
- B. Three
- C. Four
- D. Eight (C)

Explanation : Meiosis finally produces four haploid daughter cells.

7. Meiosis maintains chromosome number in sexually reproducing organisms through —

- A. Chromosomal balance
- B. Cytoplasmic division only
- C. Cell plate formation
- D. DNA damage (A)

Explanation : Meiosis halves chromosome number in gametes, and fertilisation restores diploid number.

8. Meiosis is necessary for —

- A. Gametogenesis
- B. Wound healing only
- C. Growth of epidermis only
- D. Formation of syncytium (A)

Explanation : Meiosis forms haploid gametes in diploid organisms.

9. Variations arise in meiosis mainly due to —

- A. Crossing over
- B. Furrow formation
- C. G₀ phase
- D. Cytokinesis only (A)

Explanation : Gene exchange during crossing over creates genetic variation.

10. In meiosis, malfunction may result in genetic disorders such as —

- A. Down's syndrome
- B. Cancer only
- C. Normal repair
- D. Cell plate formation (A)

Explanation : The PPT states that meiotic malfunction may cause disorders like Down's syndrome, Klinefelter's syndrome and Turner's syndrome.