

CLASS XI BIO CH:10

Set 2 – Cell Cycle and Cell Division

1. During the cell cycle, DNA replication takes place in —
A) G₁ phase B) S phase C) G₂ phase D) M phase
2. Cells that divide frequently, such as bone marrow cells, have —
A) Short G₁ phase B) Long G₁ phase C) No G₁ phase D) Short M phase
3. The period between two successive mitotic divisions is known as —
A) M phase B) G₁ phase C) Interphase D) S phase
4. The G₀ phase is absent in —
A) Nerve cells B) Heart muscle cells C) Embryonic cells D) Liver cells
5. Which of the following is not part of interphase?
A) G₁ phase B) S phase C) G₂ phase D) M phase
6. During mitosis, the spindle apparatus is formed by —
A) Golgi complex B) Centriole and microtubules C) Ribosomes D) Nucleolus
7. Spindle fibers attach to chromosomes at —
A) Chromonema B) Centromere C) Primary constriction D) Chromatid tip
8. In mitosis, centromeres divide during —
A) Prophase B) Metaphase C) Anaphase D) Telophase
9. In which phase of mitosis do chromatids begin to move to opposite poles?
A) Prophase B) Metaphase C) Anaphase D) Telophase
10. The nuclear membrane reappears in —
A) Prophase B) Metaphase C) Anaphase D) Telophase
11. Cytokinesis in plant cells differs from that in animal cells because —
A) Plant cells lack centrioles B) Cell plate formation occurs C) Cleavage furrow is absent D) All of these
12. If a cell has 46 chromosomes before mitosis, then each daughter cell after mitosis will have —
A) 23 B) 46 C) 92 D) 69
13. If a diploid cell undergoes meiosis, the number of chromosomes in each daughter cell will be —
A) Half B) Double C) Same D) Variable
14. The number of chromatids per chromosome at metaphase of mitosis is —
A) 1 B) 2 C) 3 D) 4
15. In humans, meiosis occurs during —
A) Formation of gametes B) Growth of zygote C) Repair of tissue D) All of these

- 16.** Homologous chromosomes separate during —
A) Anaphase I B) Anaphase II C) Telophase I D) Metaphase II
- 17.** Sister chromatids separate during —
A) Anaphase I B) Anaphase II C) Metaphase I D) Prophase I
- 18.** The crossing over results in —
A) Mutation B) Genetic recombination C) Chromosome doubling D) DNA replication
- 19.** Crossing over takes place between —
A) Sister chromatids of homologous chromosomes B) Non-sister chromatids of homologous chromosomes C) Sister chromatids of same chromosome D) Non-homologous chromosomes
- 20.** Chiasmata are first visible during —
A) Leptotene B) Zygotene C) Pachytene D) Diplotene
- 21.** Terminalization of chiasmata occurs during —
A) Pachytene B) Diplotene C) Diakinesis D) Zygotene
- 22.** In which stage of meiosis does reduction in chromosome number take place?
A) Anaphase I B) Anaphase II C) Telophase I D) Prophase I
- 23.** The synaptonemal complex is formed during —
A) Leptotene B) Zygotene C) Pachytene D) Diplotene
- 24.** The function of meiosis is —
A) To produce gametes B) To maintain chromosome number C) To introduce variation D) All of these
- 25.** The cell plate in plant cell division is formed from —
A) Golgi vesicles B) Ribosomes C) Lysosomes D) Endoplasmic reticulum
- 26.** During mitosis, the centromere divides —
A) At metaphase B) At anaphase C) At prophase D) At telophase
- 27.** The phase of mitosis that ensures equal distribution of chromosomes is —
A) Anaphase B) Prophase C) Metaphase D) Telophase
- 28.** The total number of chromatids in a cell at metaphase if it has 20 chromosomes will be —
A) 10 B) 20 C) 40 D) 80
- 29.** The phase of cell cycle where cell prepares for division is —
A) G₁ B) G₂ C) S D) M
- 30.** The spindle apparatus is made up of —
A) Actin B) Microtubules C) Intermediate filaments D) Collagen
- 31.** Which event ensures the same number of chromosomes in daughter cells after mitosis?
A) DNA replication in S phase B) Cytokinesis C) Nuclear division D) None
- 32.** Mitosis is important for —
A) Growth B) Repair C) Asexual reproduction D) All of these
- 33.** Meiosis introduces variations because of —
A) Independent assortment B) Crossing over C) Both D) None

- 34.** Reduction division is necessary because —
A) It maintains constant chromosome number in species B) It doubles chromosome number C) It produces identical cells D) None
- 35.** If a diploid cell with 10 chromosomes undergoes meiosis, each daughter cell will have —
A) 5 B) 10 C) 15 D) 20
- 36.** The process that leads to the formation of four haploid cells from one diploid cell is —
A) Meiosis B) Mitosis C) Cytokinesis D) DNA replication
- 37.** Synapsis occurs between —
A) Homologous chromosomes B) Non-homologous chromosomes C) Sister chromatids D) Non-sister chromatids
- 38.** Meiosis II is similar to —
A) Mitosis B) Meiosis I C) Interphase D) None
- 39.** Bivalent is formed during —
A) Leptotene B) Zygotene C) Pachytene D) Diplotene
- 40.** Number of bivalents in human meiosis I is —
A) 23 B) 46 C) 92 D) 69
- 41.** The phase of meiosis in which tetrads align at equatorial plate —
A) Metaphase I B) Metaphase II C) Prophase I D) Telophase I
- 42.** Independent assortment occurs during —
A) Metaphase I B) Anaphase I C) Metaphase II D) Anaphase II
- 43.** Meiosis results in —
A) Reduction of chromosome number B) Maintenance of genetic stability C) Formation of gametes D) All of these
- 44.** Chromosomes appear as fine threads during —
A) Leptotene B) Zygotene C) Pachytene D) Diplotene
- 45.** Which is the longest phase of cell cycle?
A) G_1 B) S C) G_2 D) M
- 46.** The G_0 phase represents —
A) Dormant phase B) Cell division phase C) DNA replication D) Chromosome formation
- 47.** If the cell cycle of a human cell takes 24 hours, M phase occupies —
A) 1 hour B) 5 hours C) 8 hours D) 12 hours
- 48.** The process of nuclear division is called —
A) Karyokinesis B) Cytokinesis C) Mitosis D) Meiosis
- 49.** In mitosis, the number of chromosomes in daughter cells —
A) Remains same as parent B) Becomes half C) Becomes double D) Reduces to one-fourth
- 50.** The phase where nucleolus and nuclear envelope disappear —
A) Prophase B) Metaphase C) Anaphase D) Telophase
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✓ Answer Key (Set 2)

1-B, 2-A, 3-C, 4-C, 5-D, 6-B, 7-B, 8-C, 9-C, 10-D,
11-D, 12-B, 13-A, 14-B, 15-A, 16-A, 17-B, 18-B, 19-B, 20-D,
21-C, 22-A, 23-B, 24-D, 25-A, 26-B, 27-C, 28-C, 29-B, 30-B,
31-A, 32-D, 33-C, 34-A, 35-A, 36-A, 37-A, 38-A, 39-B, 40-A,
41-A, 42-A, 43-D, 44-A, 45-A, 46-A, 47-A, 48-A, 49-A, 50-A.

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