Chapter 04

Cell Cycle and Cell Division

Practice Section-01

Q.1 Astral rays arise from
(1) Centriole (2) Cytoplasm (3) Chromatid (4) Centromere

Q.2 Most of the organelle duplication occurs during
(1) M-phase (2) Interphase (3) Interkinesis (4) Cytokinesis

Q.3 G_1, S and G_2 are stages of
(1) Interphase (2) Prophase (3) Metaphase (4) Anaphase

Q.4 Nucleolus, Golgi apparatus, ER reform in
(1) Anaphase (2) Prophase (3) Telophase (4) Metaphase

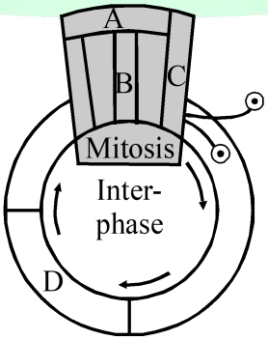
Q.5 Chromosomes are least condensed during:
(1) Telophase (2) Metaphase (3) Interphase (4) Anaphase

Q.6 Phragmoplast is the precursor of
(1) Chloroplast (2) Chromoplast (3) Cell plate (4) Leucoplast

Q.7 Significance of mitosis involves
(1) The growth of multicellular organism.
(2) Cell repair.
(3) Production of diploid daughter cells with identical genetic complement.
(4) All of the above

Q.8 In mitosis, centromere divides during
(1) Prophase (2) Metaphase (3) Anaphase (4) Telophase

Q.9 Given below is a schematic break-up of the phases/stages of cell cycle:



Which one of the following is the correct indication of the stage/phase in the cell cycle:
(1) A – Cytokinesis (2) B – Metaphase

(3) C – Karyokinesis (4) D – Synthetic phase

Q.10 During mitosis ER and nucleolus being to disappear at:

(1) Early prophase (2) Late prophase

(3) Early metaphase (4) Late metaphase

Q.11 Which stage of cell division do the following figures A and B represent respectively?

(A)

(B)

(1) Prophase - Anaphase

(2) Metaphase - Telophase

(3) Telophase - Metaphase

(4) Late Anaphase - Prophase

Q.12 Select the correct option with respect to mitosis:

(1) Chromosomes move to the spindle equator and get aligned along equatorial plate in metaphase.

(2) Chromatids separate but remain in the center of the cell in anaphase.

(3) Chromatids start moving towards opposite poles in telophase.

(4) Golgi complex and endoplasmic reticulum are still visible at the end of prophase.

Q.13 At metaphase, chromosomes are attached to the spindle fibres by their:

(1) Kinetochores (2) Centromere (3) Satellites (4) Secondary constrictions

Practice Section-02

Q.1 Non-sister chromatids of two homologous chromosomes exchange segments during
(1) Leptotene (2) Diplotene (3) Zygotene (4) Pachytene

Q.2 "Bouquet-stage" occur in which substage of prophase I?
(1) Leptotene (2) Zygotene (3) Pachytene (4) Diplotene

Q.3 During pachytene stage of meiosis, the chromosomes appear
(1) Single stranded (2) Four stranded (3) Six stranded (4) Eight stranded

Q.4 The term meiosis was coined by
(1) Farmer and Moore (2) Flemming (3) Blackman (4) Robertson

Q.5 Gap between meiosis-I and meiosis-II is called
(1) Interphase (2) Interkinesis (3) Diakinesis (4) Metakinesis

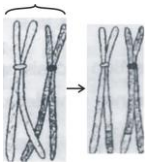
Q.6 Crossing over results in
(1) Segregation of alleles (2) Dominance of alleles
(3) Recombination of linked alleles (4) Linkage between genes

Q.7 Histone protein synthesis occurs during
(1) G_1-phase (2) G_2-phase (3) S-phase (4) Prophase

Q.8 Which one ensures maintenance of chromosome number generation after generation?
(1) Mitosis (2) Meiosis (3) Splicing (4) Metamorphosis

Q.9 Synapsis occurs between:
(1) Two homologous chromosomes (2) A male and a female gamete
(3) mRNA and ribosomes (4) Spindle fibres and centromere

Q.10 Given below is the representation of a certain event at a particular stage of a type of cell division. Which is this stage?



(1) Both prophase and metaphases of mitosis (2) Prophase I during meiosis
(3) Prophase II during meiosis (4) Prophase of Mitosis

Q.11 During gamete formation, the enzyme recombinase participates during:
(1) Prophase-II (2) Metaphase-I (3) Anaphase-II (4) Prophase-I

Q.12 Identify the meiotic stage in which the homologous chromosomes separate while the sister chromatids remain associated at their centromeres:
(1) Metaphase I (2) Metaphase II (3) Anaphase I (4) Anaphase II

ANSWER KEY

PRACTICE SECTION-01

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13
Ans:	1	2	1	3	3	3	4	3	4	2	4	1	1

PRACTICE SECTION-02

Que.	1	2	3	4	5	6	7	8	9	10	11	12
Ans:	4	1	2	1	2	3	3	2	1	2	4	3