# BIOLOGY

# BOOKS - CHETANA BIOLOGY (MARATHI ENGLISH)

## Cell Division

**Example**

**1.** What is cell cycle?

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**2.** Which processes occur during Interphase?


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**3.** Define Interphase. List the different phases of Interphase.


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**4.** Interphase is also called as preparatory phase of the cell: Give biological reason.

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**5.** What is the $G1$ Phase?

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**6.** Explain briefly G2` phase?

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**7.** Write a short note on: $G_1$ phase.

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**8.** What happen when there is loss of control at $G_0$ Phase?

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**9.** Explain briefly S phase.

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**10.** Write a short note on: S phase.

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**11.** Explain briefly G2` phase?

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**12.** Write a short note on: $G_2$ phase.

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**13.** With the help of suitable diagram, describe the cell cycle.

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**14.** Give a graphical representation of cell cycle.

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**15.** Define Generation time.

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**16.** Define Karyokinesis.

Watch Video Solution

**17.** Define Cytokinesis.

Watch Video Solution

**18.** Define cell division.

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**19.** What are the types of cell division found in animals?

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**20.** What is Amitosis?

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**21.** Write a short note on: Amitosis.

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**22.** How the life span of a cell is decided?

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**23.** State the significance of cell division.

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**24.** What is Karyogram?

Watch Video Solution

**25.** What is Karyotype?

Watch Video Solution

**26.** What is Mitosis?

Watch Video Solution

**27.** Write a short note on: Mitosis.

Watch Video Solution

**28.** Give a short account of somatic cell division.

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**29.** Which are the steps of Mitosis?

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**30.** Describe prophase of Mitosis.

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**31.** Describe Metaphase of Mitosis.

Watch Video Solution

**32.** Describe Anaphase.

Watch Video Solution

**33.** Describe Telophase of Mitosis.

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**34.** Define Cytokinesis.

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**35.** What is Mitosis?

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**36.** If a tissue has 1024 cells at a given time, how many cycles of mitosis had the original parental single cell undergone?

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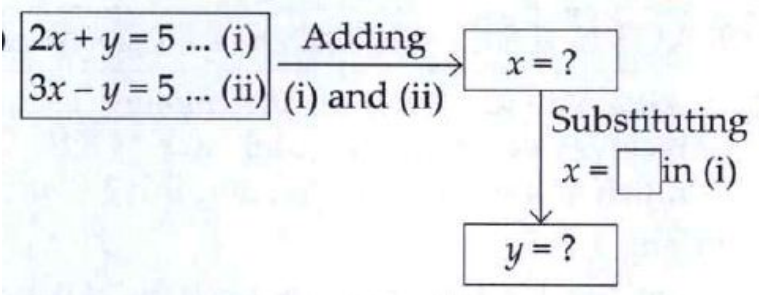
**37.**



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**38.** Write the significance of Mitosis.

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**39.** What is Meiosis?

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**40.** Give a short account of reductional division.

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**41.** Write down the explanation of prophase-1 in your own words.

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**42.** Explain various stages of Meiosis_I except prophase-I.

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**43.** Explain various stages of Meiosis-II in detail.

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**44.** State the significance of meiosis.

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**45.** What is the difference between Meiosis-I and Meiosis-II.

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**46.** Elaborate the process of recombination.

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**47.** Differentiate between Metaphase-I and Metaphase-II.

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**48.** Differentiate between Anaphase-I and Anaphase-II.

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**49.** What is exact structure of Synaptonemal complex.

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**50.** What is the structure of chaismata?

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**51.** Which types of proteins are involved in formation of spindle fibres?

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**52.** Why and how some spindle fibres elongate and some contract?

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**53.** What is the role of centrioles in the formation of spindle apparatus?

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**54.** What would have happened in the absence of meiosis?

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**55.** Distinguish between Mitosis and Meiosis.

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**56.** Distinguish between Karyokinesis and Cytokinesis.

Watch Video Solution

**57.** Distinguish between $G_1$, S and $G_2$ Phase of cell cycle.

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**58.** Distinguish between Interphase and Interkinesis.

Watch Video Solution

**59.** Distinguish between Amitosis and Mitosis.

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**60.** What is the difference between growth of non-living material and living organism?

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Exercise

**1.** The connecting link between Meiosis-I and Meiosis-II is..... .

A. interphase-I

B. interphase-II

C. interkinesis

D. anaphase-I

**Answer:**

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**2.** Synapsis is pairing of..... .

A. any two chromosomes

B. non-homologous chromosomes

C. sister chromatids

D. homologous chromosomes

**Answer:**

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**3.** Spindle apparatus is formed during which stage of mitosis?

A. Prophase

B. Metaphase

C. Anaphase

D. Telophase

**Answer:**

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**4.** Chromosome number of a cell is almost doubled up during..... .

A. $G_1$-phase

B. S-phase

C. $G_2$-phase

D. G0-phase

**Answer:**

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**5.** How many meiotic divisions are necessary for formation of 80 sperms?

A. 80

B. 40

C. 20

D. 10

**Answer:**

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**6.** How many chromatids are present in anaphase-I of meiosis-I of a diploid cell having 20 chromosomes?

A. 4

B. 6

C. 20

D. 40

**Answer:**

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**7.** In which of the following phase of mitosis chromosomes are arranged at equatorial plane?

A. Prophase

B. Metaphase

C. Anaphase

D. Telophase

**Answer:**

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**8.** Find correct statement:

A. Condensation of chromatin material occurs in prophase.

B. Daughter chromatids are formed in prophase.

C. Daughter nuclei are formed at metaphase.

D. Nuclear membrane reappears in telophase.

**Answer:**

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**9.** Histone proteins are synthesized during..... .

A. $G_1$-phase

B. S-phase

C. $G_2$-phase

D. Interphase

**Answer:**

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**10.** Which of the following is called pre-miotic gap phase?

A. S-phase

B. Interphase

C. $G_1$-phase

D. $G_2$-phase

**Answer:**

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**11.** All chromosomes are arranged parallel to equatorial plane of cell in ___ phase of mitosis.

A. prophase

B. anaphase

C. metaphase

D. telophase

**Answer:**

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**12.** S' phase of cell division is characterised by..... .

A. enlargement of nucleus

B. replication of DNA

C. disappearanc e of nucleous

D. formation of spindle fibres

**Answer:**

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**13.** Crossing over takes place during..... .

A. Leptotene

B. Zygotene

C. Pachytene

D. Diplotene

**Answer:**

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**14.** The term 'Mitosis' was coined by..... .

A. Strassburger

B. Farmer and Moore

C. Flemming

D. Boveri and Fleming

**Answer:**

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**15.** Synapsis is pairing of..... .

A. synapsis

B. crossing over

C. terminalisation

D. repulsion

**Answer:**

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**16.** The number of meiotic division required to produce 256 cells..... .

A. 8

B. 32

C. 16

D. 64

**Answer:**

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**17.** The spindle apparatus in plant cells is called..... .

A. Astral

B. Amitotic

C. Anastral

D. Amphiastral

**Answer:**

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**18.** The correct sequence of stages in cell cycle is..... .

A. M S $G_1G_2$

B. $G_1$ S $G_2$ M

C. S$G_1G_2$ M

D. $G_1G_2$ M S

**Answer:**

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**19.** Re-appearance of nuclear membrane during mitosis occurs in..... .

A. Prophase

B. Anaphase

C. Metaphase

D. Telophase

**Answer:**

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**20.** The new cells produced in cell division are called as..... .

A. parent cell

B. Daughter cell

C. son cell

D. none of the above

**Answer:**

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**21.** A series of changes or sequential events which occure regularly in a dividing cell is called..... .

A. cell cycle

B. cell division

C. replication

D. duplication

**Answer:**

 Watch Video Solution

**22.** The cell cycle consists of.....phase.

A. 1

B. 2

C. 3

D. 4

**Answer:**

Watch Video Solution

**23.** .....is called Resting phase.

A. M-phase

B. Interphase

C. Cytokinesis

D. Telophase

**Answer:**

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**24.** Which one is called post-mitotic phase?

A. $G_1$-phase

B. $G_2$-phase

C. M

D. Both a and b

**Answer:**

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**25.** The stage in which cell does not divide is..... .

A. $G_0$-phase

B. $G_1$-phase

C. $G_2$-phase

D. S

**Answer:**

Watch Video Solution

**26.** Quiescent stage is..... .

A. $G_1$-phase

B. $G_2$-phase

C. S

D. $G_0$-phase

**Answer:**

Watch Video Solution

**27.** Cancer occurs if cell enters into.....phase.

A. $G_0$-phase

B. $G_1$-phase

C. $G_2$-phase

D. S

**Answer:**

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**28.** Replication of DNA takes place in.....stage.

A. $G_1$-phase

B. $G_2$-phase

C. S

D. $G_0$-phase

**Answer:**

Watch Video Solution

**29.** $G_2$ phase is also called as..... .

A. Pre-mitotic phase

B. Post-mitotic phase

C. DNA synthesis phase

D. None of above

**Answer:**

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**30.** The actual cell division occurs in.....phase.

A. M-phase

B. interphase

C. interkinesis

D. $G_0$-phase

**Answer:**

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**31.** Living cells divide by.....modes.

A. 1

B. 2

C. 3

D. 4

**Answer:**

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**32.** Amoeba follows.....type of cell division.

A. mitosis

B. amitosis

C. meiosis

D. none of above

**Answer:**

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**33.** Mitosis type of cell division occurs in.....cell.

A. body

B. reproductive

C. both 'a' and 'b'

D. none of the above

**Answer:**

Watch Video Solution

**34.** Meiosis type of cell division occurs in.....cell.

A. body

B. sex

C. both 'a' and 'b'

D. none of the above

**Answer:**

Watch Video Solution

**35.** Somatic cell division is.....type of cell division.

A. amitosis

B. mitosis

C. meiosis

D. none of the above

**Answer:**

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**36.** Equational division is the name of..... .

A. Amitosis

B. Mitosis

C. Meiosis

D. None of the above

**Answer:**

 Watch Video Solution

**37.** Reduction division is the name of..... .

A. Mitosis

B. Meiosis

C. Amitosis

D. None of the above

**Answer:**

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**38.** 2 sister chromatid are joined at the place called..... .

A. centromere

B. chromonema

C. chromatid

D. none of the above

**Answer:**

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**39.** Spindle fibers are produced in.....phase.

A. Prophase

B. Metaphase

C. Anaphase

D. Telophase

**Answer:**

Watch Video Solution

**40.** .....is the shortest phase.

A. Prophase

B. Metaphase

C. Anaphase

D. Telophase

**Answer:**


**41.** The process in which the chromosomes duplicate only once but the cell divides twice is..... .

A. Amitosis

B. Mitosis

C. Meiosis

D. None of the above

**Answer:**

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**42.** The place where crossing over takes place is called..... .

A. chiasmata

B. terminalisation

C. centromere

D. none of these

**Answer:**

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**43.** Genetic recombination occurs due to.....

.

A. amitosis

B. Mitosis

C. Meiosis

D. None of the above

**Answer:**

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**44.** Cell membrane plate formation occurs in.....cell.

A. plants

B. animals

C. bacteria

D. none of above

**Answer:**

Watch Video Solution

**45.** Cell furrow formation occurs in.....cell.

A. plants

B. animals

C. bacteria

D. none of above

**Answer:**

Watch Video Solution

**46.** Meiosis-II is similar to..... .

A. Mitosis

B. Amitosis

C. both 'a' and 'b'

D. none of the above

**Answer:**

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**47.** .....is the longest phase of meiotic division.

A. Prophase-I

B. Prophase-II

C. Metaphase-I

D. Metaphase-II

**Answer:**

Watch Video Solution

**48.** In meiosis, chromosomes replicate during..... .

A. Prophase-I

B. Prophase-II

C. Telophase I

D. Interphase

**Answer:**

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**49.** Replication of DNA takes place in.....stage.

A. Prophase

B. S-phase

C. $G_2$-phase

D. Interkinesis

**Answer:**

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**50.** During metaphase chromosomes..... .

A. become short and thick

B. get arranged at the equator

C. duplicate and divide

D. move to the respective poles

**Answer:**

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**51.** Exchange of genetic material takes place during..... .

A. Diplotene

B. Leptotene

C. Zygotene

D. Pachytene

**Answer:**

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**52.** Crosssing over takes place between..... .

A. sister chromatids

B. non-homologous chromosomes

C. non-sister chromatids of homologous chromosomes

D. any two chromatids

**Answer:**

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**53.** Pairing of homologous chromosomes is called..... .

A. crossing over

B. synapsis

C. chiasma formation

D. duplication

**Answer:**

Watch Video Solution

**54.** How many haploid daughter cells are produced at the end of meiosis-II?

A. 2

B. 4

C. 6

D. 8

**Answer:**

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**55.** Chromosomes move to the respective poles due to the contraction of..... .

A. interzonal fibres

B. chromosomal fibres

C. inter-polar fibres

D. astral rays

**Answer:**

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**56.** Re-appearance of nucleolus is during.....

.

A. telophase

B. prophase

C. Cytokinesis

D. Interkinesis

**Answer:**

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**57.** Which of the following is the shortest phase?

A. Metaphase

B. Anaphase

C. Interphase

D. S-phase

**Answer:**

Watch Video Solution

**58.** Which of the following is called pre-miotic gap phase?

A. S-phase

B. Interphase

C. $G_1$-phase

D. $G_2$-phase

**Answer:**

Watch Video Solution

**59.** Crossing over takes place during..... .

A. Leptotene

B. Zygotene

C. Pachytene

D. Diplotene

**Answer:**

Watch Video Solution

**60.** Pairing of homologous chromosomes is called..... .

A. synapsis

B. crossing over

C. terminalisation

D. repulsion

**Answer:**

Watch Video Solution

**61.** The number of meiotic division required to produce 256 cells..... .

A. 8

B. 32

C. 16

D. 63

**Answer:**

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**62.** What is cell cycle?

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**63.** What happens in synthesis phase of cell cycle.

Watch Video Solution

**64.** Which chromosomes undergo crossing over?

Watch Video Solution

**65.** Explain interkinesis.

Watch Video Solution

**66.** Write a short note on: Amitosis.

Watch Video Solution

**67.** What is the $G_0$ Phase?

Watch Video Solution

**68.** Write the significance of Mitosis.

Watch Video Solution

**69.** Elaborate the process of recombination.

Watch Video Solution

**70.** Write a short note on: $G_0$ phase.

Watch Video Solution

**71.** Write down the explanation of prophase-1 in your own words.

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**72.** Describe the equational division.

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**73.** Describe Prophase-I of Meiosis-I with suitable diagrams.

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