

**GIRLS' HIGH SCHOOL & COLLEGE - PRAYAGRAJ**

**WORKSHEET NO. : 2**

**SESSION 2020 - 21**

**CLASS 10 (A, B, C, D, E, F)**

**SUBJECT : BIOLOGY**

**Instructions :** Parents are expected to ensure that the student spends two days to read and understand the chapter according to the books and website referred and thereafter answer the given questions.

**Reference :** Website : [www.srijanpublishers.com](http://www.srijanpublishers.com), <https://byjus.com/biology/mitosis/>

**Books :** ICSE Biology Class 10 = Srijan Publishers

Concise Biology for Class 10 = Selina Publishers

**CHAPTER : CELL DIVISION**

**Q.1- Give one word :**

- (a) Number of daughter cells formed in mitosis.
- (b) The type of cell division which occurs in reproductive organs.
- (c) The type of cells where mitosis occurs.
- (d) The cell division which brings about vegetative growth in plants.
- (e) Number of daughter cells formed in meiosis.

**Q.2- fill in the blanks :**

- (a) ..... is known as reductional division.
- (b) ..... is the longest phase of mitosis.
- (c) Nucleolus disappears during .....
- (d) Chromosomes move towards the opposite poles during .....
- (e) The sister chromatids remain attached to each other at the .....

**Q.3- Name the following :**

- (a) The type of cell division in which chromosome number remains the same.
- (b) The shortest phase of mitosis.
- (c) The phase of cell division when chromosomes arrange on the equatorial plane.
- (d) A membrane that disappears during late prophase.
- (e) The process of cytoplasmic division.

**Q.4- Mention whether the following statements are true or false. If false, rewrite the correct statements**

- (a) Crossing over between chromatids can occur only between homologous chromosomes.
- (b) The unfertilized human egg has half the number of chromosomes of the body cells.

- (c) Mitosis is the type of cell division occurring in the cells of injured parts of the body.
- (d) Centromere is the organelle of the cell that initiates cell division.
- (e) Eukaryotic cells have an advance nucleus surrounded by nuclear membrane.

**Q.5- Choose the correct option :**

- (a) Duplicated chromosomes are joined at a point termed :
  - (i) Centrosome
  - (ii) Centriole
  - (iii) Centromere
  - (iv) Chromatids
- (b) The disappearance of spindle and uncoiling of chromosome takes place in :
  - (i) Anaphase
  - (ii) Prophase
  - (iii) Telophase
  - (iv) Metaphase
- (c) The period between two successive mitotic divisions is :
  - (i) Prophase
  - (ii) Interphase
  - (iii) Diakinesis
  - (iv) Interkinase
- (d) Meiosis occurs in :
  - (i) Vegetative cells
  - (ii) Meristematic cells
  - (iii) Reproductive cells
  - (iv) All of the above
- (e) The centromere divides into two in :
  - (i) Prophase
  - (ii) Anaphase
  - (iii) Metaphase
  - (iv) Telophase

**Q.6- Match the columns and rewrite the correct matching pair.**

Column A	Column B
(a) Chromosomes become arranged in a horizontal plane at the equator.	(i) Anaphase
(b) Daughter chromosomes move to opposite poles of the spindle	(ii) Prophase
(c) Chromosomes become visible as fine, long threads	(iii) Telophase
(d) Chromosomes lose their distinctiveness and gradually become transformed into chromatin network.	(iv) Metaphase

**Q.7- Give one difference between :**

- (a) Chromosome and chromatid
- (b) Centrosome and centromere
- (c) Haploid and diploid cells

- (d) Metaphase and anaphase.
- (e) Cytokinesis in plant and animal cell

**Q.8- Explain the following terms :**

- (a) Karyokinesis
- (b) Meiosis
- (c) Chromosomes
- (d) Chiasmata
- (e) Crossing over
- (f) Chromatid
- (g) Gene
- (h) Homologous Chromosomes
- (i) Centromere
- (j) Mitosis

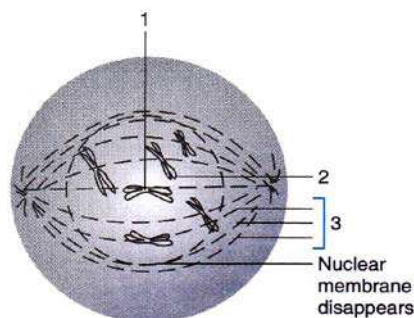
**Q.9- Give reason for the following :**

- (a) Mitosis is called equational division.
- (b) Meiosis is called reductional division.
- (c) Chromosomes are the carriers of heredity.
- (d) Gametes have a haploid number of chromosomes.

**Q.10- Draw a diagram of the nucleus of a cell, having chromosome number 6, as it would appear in the Metaphase stage of Mitosis in an animal cell and label the following parts in the diagram.**

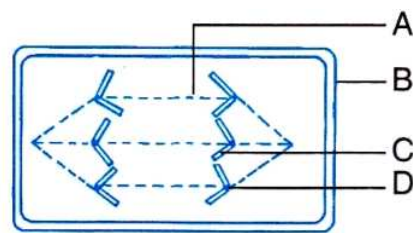
- (a) Aster
- (b) Spindle fibres
- (c) Chromatid
- (d) Centromere

**Q.11- Given here is a diagram representing a stage during mitotic cell division in an animal cell.**



- (a) Identify the stage. Give a reason to support your answer.
- (b) Name the cell organelle that forms the aster.
- (c) Name the parts labelled 1, 2 and 3.
- (d) Name the stage that follows this stage of mitosis. How can this stage be identified?
- (e) Mention two points of difference between mitosis and meiosis with regard to :
  - (i) the number of daughter cells formed.
  - (ii) the chromosome number in the daughter cells.

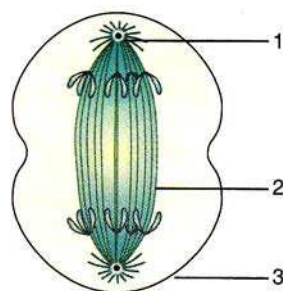
**Q.12- The diagram given below represents a stage in cell division.**



Study the same and answer the questions that follow

- (a) Identify the stage of cell division.
- (b) Name the parts labelled A, B, C and D.
- (c) What is the unique feature observed in this stage?
- (d) Where does this type of cell division usually occur?
- (e) How many daughter cells are formed from this type of cell division?
- (f) Is the dividing cell shown a plant cell or an animal cell? Give a reason to support your answer.

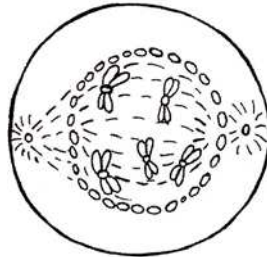
**Q.13- The diagram below represents a stage during cell division. Study the same and then answer the questions that follow**



- (a) Name the parts labelled 1, 2 and 3.
- (b) Identify the above stage and give a reason to support your answer.
- (c) Mention where in the body this type of cell division occurs.

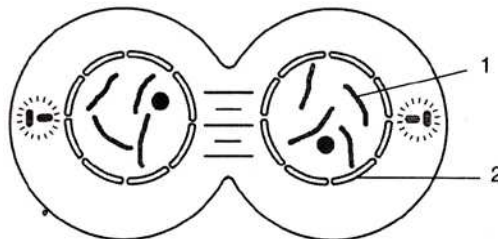
- (d) Name the stage prior to this stage and draw a diagram to represent the same.

**Q.14- The given diagram shows a stage during mitotic division in an animal cell :**



- (a) Identify the stage. Give a reason to support your answer.  
 (b) Draw a neat labelled diagram of the cell as it would appear in the next stage. Name the stage.  
 (c) In what two ways is mitotic division in an animal cell different from the mitotic division in a plant cell?  
 (d) Name the type of cell division that occurs during :  
 (i) Growth of a shoot.  
 (ii) Formation of pollen grains.

**Q.15- Study the diagram given below which represents a stage during the mitotic cell division and answer the questions that follow :**



- (a) Identify the stage giving suitable reasons.  
 (b) Name the parts numbered 1 and 2.  
 (c) What is the technical term for the division of nucleus?  
 (d) Mention the stage that comes before the stage shown in the diagram. Draw a neat labelled diagram of the stage mentioned.  
 (e) Which is the cell division that results in half the number of chromosomes in daughter cells?

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