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**LESSON number 7**

**REPRODUCTION OF ORGANISMS**

**Purpose:** To study the processes of asexual and sexual reproduction of organisms, to understand the types of the sexual process, structural features and stages of formation of germ cells, and also to get acquainted with the biological aspects of human reproduction. Know the features of the formation of germ cells and their possible violations.

**INDEPENDENT WORK**

(Checking independent out-of-class work)

**Basic concepts and provisions of the topic**

(explain the concepts)

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| REPRODUCTION – | | | | | | |  | | | | | | |
|  | | | | | | | | | | | | | |
| SEXUAL BREEDING – | | | | | | | | | | | |  | |
|  | | | | | | | | | | | | | |
| SEXUAL REPRODUCTION – | | | | | | | | | | |  | | |
|  | | | | | | | | | | | | | |
| DISPUTES– |  | | | | | | | | | | | | |
|  | | | | | | | | | | | | | |
| SPOR EDUCATION – | | | | | | | | | |  | | | |
|  | | | | | | | | | | | | | |
| VEGETATIVE BREEDING - | | | | | | | | | | | | |  |
|  | | | | | | | | | | | | | |
| FRAGMENTATION - | | | | | | | |  | | | | | |
|  | | | | | | | | | | | | | |
| EGG- | | | | |  | | | | | | | | |
|  | | | | | | | | | | | | | |
| GAMETOGENESIS– | | | | | |  | | | | | | | |
|  | | | | | | | | | | | | | |
| SPERMATOGENESIS | | | | | | | |  | | | | | |
|  | | | | | | | | | | | | | |
| OVOGENESIS | | |  | | | | | | | | | | |
|  | | | | | | | | | | | | | |
| OVOTIDA – | |  | | | | | | | | | | | |
|  | | | | | | | | | | | | | |
| SPERMATOGONY – | | | | | | | | |  | | | | |
|  | | | | | | | | | | | | | |
| FIRE – | | | |  | | | | | | | | | |
|  | | | | | | | | | | | | | |

Describe the process of parthenogenesis. What living organisms is it typical for?

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|  |

Describe the conjugation process using the example of Spirogyra algae.

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**PRACTICAL PART**

**Work N. 1**

**Meiosis**

|  |  |
| --- | --- |
| MEIOSIS– |  |
|  | |
| Opened: |  |

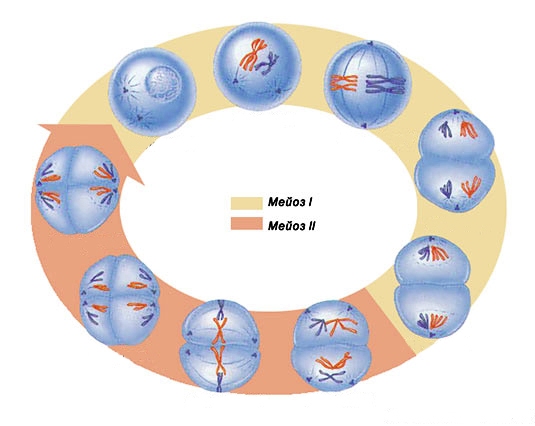
Explain the essence of meiosis? What cells of the body is this process typical for?

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What mechanisms during meiosis contribute to the manifestation of phenotypic and genotypic diversity of the species? Describe this process.

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SCHEME OF MEIOSIS



**Meiosis I**

**Meiosis II**

PROPHASE I MEIOSIS I



|  |  |  |  |
| --- | --- | --- | --- |
| Leptotene – | | |  |
|  | | | |
| Zygotena – |  | | |
|  | | | |
| Paquitena – | |  | |
|  | | | |
| Diplotena – | | |  |
|  | | | |
| Diakinesis – | |  | |
|  | | | |

PHASES OF MEIOSIS I

Sketch the phases of meiosis I

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Prophase I |  | Metaphase I |  | Anaphase I |  | Telophase I |

**Work N 2**

**Frog egg cage**

**Examine the specimen at a low magnification microscope**

Magnification \_\_\_×\_\_\_

|  |  |
| --- | --- |
| 1. |  |
| 2. |  |
| 3. |  |

**Work number 3**

**Ovary of a mammal (cat)**

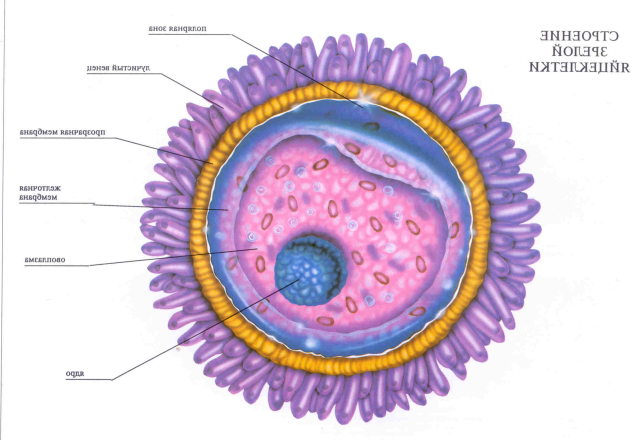
**Examine the specimen at a low magnification microscope**

|  |  |
| --- | --- |
| 1.  Magnification \_\_\_×\_\_\_ |  |
| 2. |  |
| 3. |  |
| 4. |  |
| 5. |  |
| 6. |  |

**Work number 4**

**Mammalian ovum (cat)**

|  |  |
| --- | --- |
| 1.  Magnification \_\_\_×\_\_\_ |  |
| 2. |  |
| 3. |  |
| 4. |  |
| 5. |  |
| 6. |  |



1.

2.

3.

4.

5.

6.

**Work number 5**

**Male rat sex glands**

**Examine and sketch the gonads of a male rat**

Magnification \_\_\_×\_\_\_

|  |  |
| --- | --- |
| 1. |  |
| 2. |  |
| 3. |  |
| 4. |  |

**Work number 6**

**Human sperm**

Magnification \_\_\_×\_\_\_

|  |  |
| --- | --- |
| 1. |  |
| 2. |  |
| 3. |  |
| 4. |  |
| 5. |  |

7.

6.

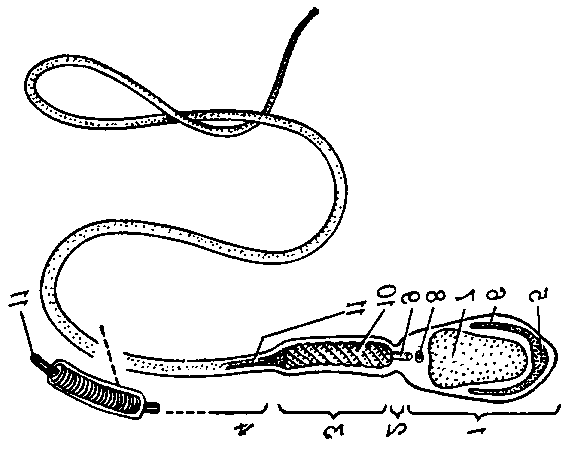
5.

4.

3.

2.

8.



1.

12.

11.

10.

9.

Human sperm

**Work number 7**

**Guinea pig sperm**

Magnification \_\_\_×\_\_\_

|  |  |
| --- | --- |
| 1. |  |
| 2. |  |
| 3. |  |
| 4. |  |

**Work number 9**

**Rooster sperm**

Magnification \_\_\_×\_\_\_

|  |  |
| --- | --- |
| 1. |  |
| 2. |  |
| 3. |  |
| 4. |  |

**Work number 8**

**Gametogenesis**

Sign the main stages ofgametogenesisand the number of chromosomes

in the cell (n,c)

SPERMATOGENESIS

OOGENES

Make a comparative description of mitosis and meiosis (a), indicate their biological significance (b), explain what practical significance these processes have for the future doctor.

|  |  |
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| а) |  |
|  |  |
|  |  |
| b) |  |
|  |  |
|  |  |
| c) |  |
|  |  |
|  |  |