

## Biology - 12th Class Biology Chapter 21 Short Questions Preparation

Q1. What are three sets of microtubules which originate from each pair of centriole during mitosis?

**Ans 1:** Three sets microtubules originate from centrioles are asteral microtubules radiate outward and from aster while other two sets of microtubules compose the spindle i.e the kinetochore microtubules and polar microtubules.

Q2. Define metastasis. Or what is metastasis?

**Ans 1:** The cell composing a malignant tumor or cancer, divide more rapidly, mostly invade surrounding tissues, get into the body's circulatory system, and set up areas of proliferation away from their site of original appearance. This spread of tumor cells and establishment of secondary area of growth is called metastasis.

Q3. Define mitotic apparatus. Or Give its functions.

**Ans 1:** Mitotic apparatus composed of spindle fibers, centrioles and asters. Mitotic apparatus plays an important role in cell division and equal distribution of chromosomes during cell division.

Q4. How cytokinesis occur in plants?

**Ans 1:** At cytokinesis, in place of contractile ring a membrane structure, phragmoplast formed from vesicle, which originates from Golgi complex. These vesicles lined up in the center of the dividing cell, where they fuse to form phragmoplast. The membrane of vesicles become the plasma membrane of daughter cells.

Q5. Name only stages of prophase I of meiosis.

**Ans 1:** Following are the sub stages of prophase I of meiosis

**Ans 2:** i) Leptotene ii) zygotene iii) pachytene iv) diplotene v) diakinesis

Q6. What are the events of zygotene of prophase -I of meiosis?

**Ans 1:** First essential phenomenon of meiosis i.e, pairing of homologous chromosomes called synapsis starts. Each paired but not fused, complex structure is called bivalent or tetrad.

Q7. Distinguish between karyokinesis and cytokinesis.

**Ans 1: Karyokinesis:** Division of nucleus is called karyokinesis.

**Cytokinesis:** Division of cytoplasm is called cytokinesis.

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Q8. What change occurs in dividing cell during zygotene?

**Ans 1:** Pairing of chromosomes takes place during the zygotene stage of the meiosis. Pairing may start from center to towards end or may start from one end to another end.

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Q9. Differentiate between necrosis and apoptosis.

**Ans 1: Necrosis:** Cell death due to tissue damage is called necrosis

**Ans 2: Apoptosis:** Internal programme of events and sequence of morphological changes by which cell commits suicide is collectively called apoptosis.

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Q10. Give only cause of Down's syndrome and Klinefelter syndrome.

**Ans 1:** These are meiotic errors due to non disjunction and due to unequal distribution of chromosomes.

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