

(d) Diplotene

- (i) In this stage, the homologous chromosomes repel each other. The two homologous chromosomes thus separate from each other.
- (ii) By the end of this stage, the chiasmata begin to move along the length of the chromosomes from the centromere towards the end. This displacement of chiasmata is termed as **terminalization**

(e) Diakinesis

- (i) Terminalization is completed in this stage.
- (ii) The bivalents tend to repel each other and migrate to the periphery of the nucleus just inside the nuclear membrane
- (iii) The nucleolus disappears
- (iv) The nucleus membrane also begins to disintegrate and disappear
- (v) Spindle fibre make their appearance in the cytoplasm

Metaphase-I

The spindle fibres get well developed. The chromosomes move towards the equator and finally they orient themselves on the equator. The centromeres lie towards the poles and the arms towards the equator. Unlike the condition in mitosis, the two chromatids of each chromosome do not separate in meiosis because centromere does not divide.

(C) Anaphase-1

Each chromosome with two chromatids and undivided centromere moves towards the opposite pole of the cell. So the actual reduction occurs in this stage. When separated, in each chromosome the sister chromatids are connected by a centromere. This stage of the chromosomes is called a diad. Shrinking of spindle fibre takes place.

(D) Telophase-1 The haploid number of chromosomes after reaching their respective poles, become very long and uncoil. The nuclear membrane and the nucleolus reappear and thus two daughter nuclei are formed.

11 Meiotic-II In this division no change in number of chromosome takes place. **Interphase-II**

It is a period in between meiosis-I and Meiosis-II. It may or may not be present. It is generally present in animal cells. There is no S-phase and no DNA synthesis. Like Meiotic -I, Meiotic-II is divided into two parts Karyokinesis and cytokinesis.

12 Karyokinesis Like meiotic-I, it is divided into four phases

(a) Prophase- II

The chromosomes appear distinct with two chromatids. Each centriole divides into two resulting in the formation of two centrioles. Then each moves to opposite pole. They produce asters. Spindle fibres are formed between the asters. The nuclear membrane and nucleolus disappear.

(b) Metaphase - II The chromosomes get arranged on the equator. The two chromatids of each chromosome are separated by the divisions of centromere and are attached to the spindle fibres.

(c) Anaphase II The separated chromatids become daughter chromosomes and move to the opposite poles due to the contraction of the spindle fibres.