

Identify, with the aid of diagrams, the main stages of meiosis (4 stages in meiosis I and 4 stages in meiosis II) $2n=6$

Meiosis I

1. Interphase ((duplication of chromosomes))
2. Prophase I ($2n$ pairs)
 - a. coiling up
 - b. crossing over of chromatids of homologous chromosomes, forming a tetrad
 - c. further condensation, nuclear envelope breaks, formation of spindle
3. Metaphase I (n homologous chromosomes/tetrads)
 - a. aligned on metaphase plate, sister chromatids still attached by centromere
 - b. spindle microtubules attached to one homologous chromosome comes from one pole, microtubule attached to other comes from other pole
4. Anaphase I
 - a. sister chromatids making up the chromosome still attached at centromere
 - b. migration to poles
 - c. only tetrads split up, so only 3 doubled chromosomes ((vs mitosis with 6 chromosomes))
5. Telophase I (and cytokinesis)
 - a. each pole has haploid chromosome set, although in duplicate form, still have 2 sister chromatids
 - b. nuclear envelope forms, cytokinesis, but NO chromosome duplication

Meiosis II

- Same as mitosis except:
 - Begins with n chromosomes
 - Ends with n chromatids

Describe, with the aid of diagrams, the behaviour of chromosomes during meiosis,, and the associated behaviour of the nuclear envelope, cell membrane and centrioles. (names of the main stages are expected, but not the sub-division of prophase)

Define the terms haploid and diploid, and explain the need for a reduction

Homologous chromosomes	2 matching chromosomes (screw it they're 2 called bromosomes) carrying genes controlling the same inherited characteristics
Synapsis	chromosomes coming together as pairs, forming a tetrad
Crossing over	Chromatids of bromosomes exchanging segments during synapsis
Chiasma (pg142)	place where 2 homologous chromatids attach to each other

Tetrad	A set of bromosomes formed during prophase I of meiosis
Haploid	1 set of chromosomes (incomplete)
Diploid	2 complete sets of chromosomes
Reduction division	first meiosis

Meiosis occurs in gonads