



What I Know

Choose the letter of the best answer. Write the chosen letter on a separate sheet of paper.

1. It is a process by which genetic materials exchange between non- sister chromatids.
a. crossing over b. meiosis c. mitosis d. recombination
2. It is the process of recombining genes in order to produce new gene variation that is different from the parent chromosome.
a. crossing over b. meiosis c. mitosis d. recombination
3. In which phases of meiosis do synapsis and crossing over takes place?
a. Interphase C. Prophase
b. Metaphase D. Telophase
4. Which of the following statements is true concerning biological inheritance?
a. Each human somatic cell contains one of each type of chromosome.
b. When sex cells are produced, paired homologous chromosomes separate so that each gamete contains only one of the pair of alleles for each trait.
c. Brothers and sisters frequently have exactly the same combination of chromosomes
d. All of the above

- ☐ 5. Crossing over of the parts of the chromosomes:
- a. Has no effect on genetic linkage
 - b. Usually decreases the number of genetic combinations in a population
 - c. Can increase the number of genetic combinations in a population
 - d. Usually result to mutation
- ☐ 6. Crossing over resulting in the inheritance of altered chromosomes by children occurs:
- a. During mitosis
 - b. During the interphase
 - c. During meiosis
 - d. Both the above
- ☐ 7. Crossing over doesn't take place _____
- a) Between two sister chromatids
 - b) Between two non-sister chromatids
 - c) For recombination repair
 - d) Between three chromatids

8. Except for a pairing of sex chromosomes, homologous chromosomes_____.

- a. carry the same genes
- b. are the same shape
- c. are the same length
- d. all of the above

9. It is the point of genetic exchange or chromosomal crossover

- a. chiasma
- b. centromere
- c. synaptonemal complex
- d. kinetochore

10. It is a substage in Prophase I, where homologous chromosomes pair up to form bivalent zygote

- a. diakinesis
- b. diplotene
- c. pachytene
- d. zygotene

11. Synaptonemal complex is shed in _____ stage, from parts other than recombination site.

- a. diakinesis
- b. diplotene
- c. pachytene
- d. zygotene

12. The following are considered factors affecting the process of crossing over EXCEPT

- a. age b. irradiation c. nutrition d. pressure

13. During diplotene stage the bivalent chromosomes from synapsis becomes four chromatids known as

- a. triad b. tetrad c. quartet d. quadruple

14. If crossing over involves formation of more than two chiasma between non sister chromatids of homologous chromosomes, it is classified as:

- a. single b. double c. multiple d. non crossing over

15. Why should we not expose our sex cells to X-rays, radiation or any toxic chemicals?

- a. radiation and chemicals may lead to cell mutation
b. It might have damage that causes it to become cancerous
c. it increases the frequency of crossing over
d. all of these