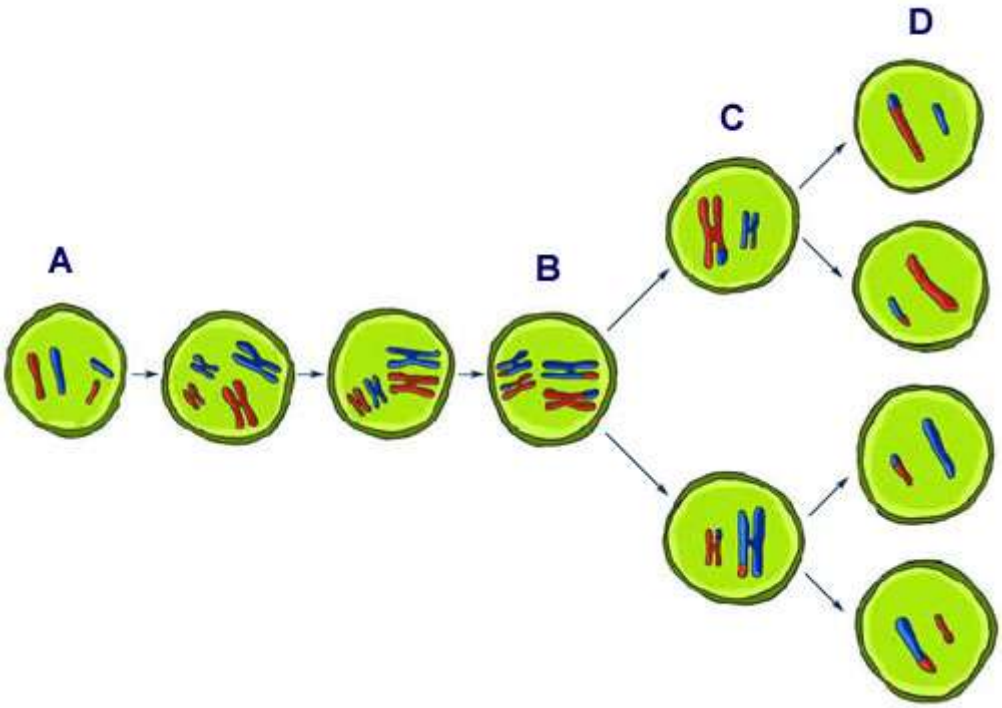
Name: Student ID:

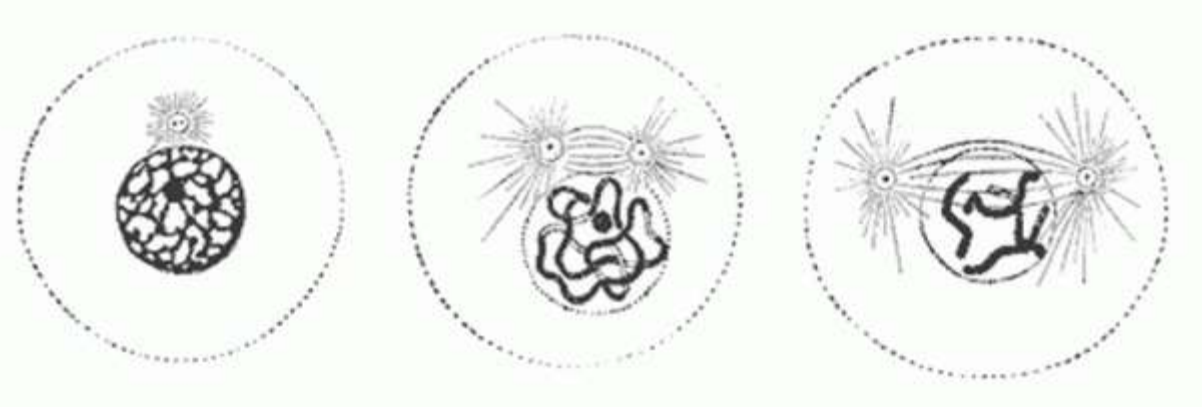
Mitosis vs. Meiosis Quiz (Week 11B)

Instructions: You have 15 minutes for the completion of all questions. Each question is worth 1 point if answered correctly. Each unanswered question will be deducted at ½ point. Each wrong answer will be deducted at ¼ point. The bonus question can give you a maximum of 3 points.

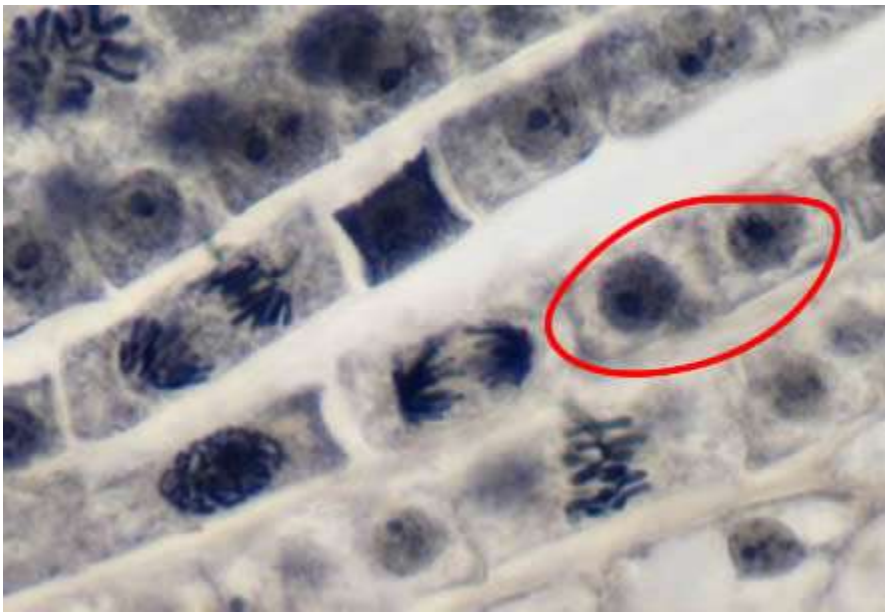
1. Which of these do mitosis and binary fission have in common?
    a. The daughter cells have the same number of chromosomes as the parent cell
    b. Daughter cells contain paired chromosomes
    c. Both are limited to prokaryotic cells
    d. They are asexual reproduction
2. You can see a diploid nucleus with chromosomes that have not undergone crossing over in the field labeled



3. What stage of mitosis is depicted by the image below?
    a. metaphase
    b. cytokinesis
    c. prophase
    d. anaphase
    e. telophase



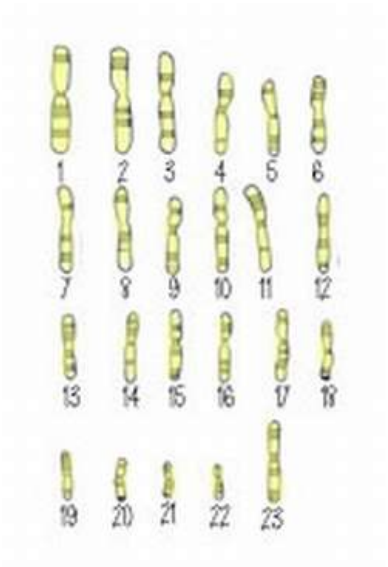
4. The phase of the cell cycle that appears to have just been completed in the circled region is
    a. cytokinesis
    b. prophase
    c. metaphase
    d. anaphase
    e. telophase



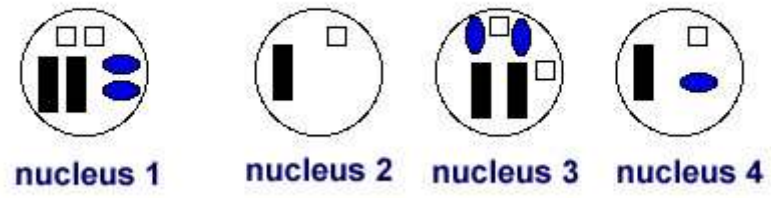
5. A human cell ordinarily will have 23 *pairs* of chromosomes, for a total of 46 chromosomes. At the end of a cell cycle, including mitosis, the new cells will have
    a. only the 23 paternal chromosomes
    b. only the 23 maternal chromosomes
    c. 92 chromosomes, as a result of doubling during the S-phase of the cell cycle
    d. 23 pairs of chromosomes; 46 total
6. A diploid cell in a buffalo has 60 chromosomes. A sperm or egg cell in a buffalo can be expected to have
    a. 30 chromosomes
    b. 60 chromosomes
    c. 120 chromosomes

d. 15 chromosomes

7. The karyotype below is from a human cell. Its source is
    a. a normal somatic (body) cell
    b. polyploid
    c. haploid
    d. diploid



8. Nucleus 1 shows a diploid nucleus of a cartoon smurf. Which nucleus is from a haploid smurf cell?
    a. none of them
    b. nucleus 2
    c. nucleus 4
    d. nucleus 3



9. The phase of mitosis depicted in the circled region above is
    a. metaphase
    b. prophase
    c. telophase
    d. anaphase

10. Haploid reproductive cells are collectively referred to as
    a. zygotes
    b. polar bodies
    c. blastocysts
    d. gametes
11. Cells that will no longer undergo division enter a phase known as
    a. meiosis
    b. apoptosis
    c. interphase
    d. mitosis
    e. G_0
12. Interphase is broken into phases known as
    a. G_1, S and G_2
    b. S, Mitosis, and Cytokinesis
    c. prophase, metaphase, anaphase and telophase
    d. G_0, G_1, and G_2
13. In stage G_1, the cell
    a. doubles the cell contents, excluding the chromosomes
    b. creates two identical nuclei
    c. reduces the number of chromosomes from the diploid number to the haploid number
    d. copies the chromosomes
14. After a bacterial cell has undergone binary fission, how many chromosome copies will each daughter cell contain?
    a. one
    b. one pair
    c. two (one maternal and one paternal)
    d. forty-six
15. Which of the following mitosis not used for?
    a. Repair (of a wound) in multicellular organisms
    b. Asexual reproduction in unicellular organisms
    c. Development (e.g., baby in mother's womb)
    d. Production of gametes
    e. All of the above use mitosis
16. Which of the following statements about human reproduction is true?
    a. Mitosis in males is also known as spermatogenesis

b. Sperm and ova are zygotes
c. Oögenesis takes place in the ovaries of females

17. Which of the following is true about mitosis in humans?
    a. All cells of the body go through mitosis more or less constantly from conception until death
    b. Each cell undergoing mitosis divides into two complete new cells that are usually identical to the cell from which they originated
    c. It takes roughly two weeks for a cell to go through all six phases of mitosis
18. Which of the following is true about meiosis in humans?
    a. Sperm and ova are not identical to the parent cells that produced them
    b. Females produce far more gametes than do males
    c. The process begins in males and females at puberty
19. Oöcytes are:
    a. Ova that have not yet completed the oögenesis process
    b. The locations on chromosomes where ova are produced
    c. The male equivalent of ova
20. As a result of "fertilization", which of the following normally occur?
    a. A gamete is created
    b. A single sperm and ovum combine their genetic material to create an offspring with the same number of chromosomes as the parents
    c. The final phase of spermatogenesis is begun
21. Twins that result from the splitting of one zygote are called
    a. Universal
    b. Monozygotic
    c. Dizygotic
    d. Mitochondrial
22. Which of the following statements is true concerning conjoined twins?
    a. They are monozygotic twins
    b. They are not genetically identical
    c. They are the result of a single egg dividing into two sometime after the 13th day following conception
    d. A and c
    e. All of the above
23. Which of the following statements is true concerning true genetic chimeras?
    a. They may be hermaphrodites
    b. They began as two separate zygotes
    c. They are always females
    d. A and b
    e. None of the above

Bonus question: What is the most interesting thing you learned in this lesson? Why?