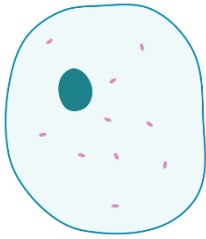


Name: _____

Date: _____

Review for Cell, mitosis, chromosomes, and puberty and cycles test

1. Using the picture below label the cytoplasm, cell membrane, nuclear membrane and nucleus. Give the definitions of each.



Cytoplasm : transports different substances within the cell

Cell Membrane : protects cell, is semi-permeable which means it allows only some substances to enter or exit the cell.

Nuclear Membrane : protects the nucleus and controls exchanges between nucleus and cell.

Nucleus: controls cells activity and contains DNA

2. Define the following terms:

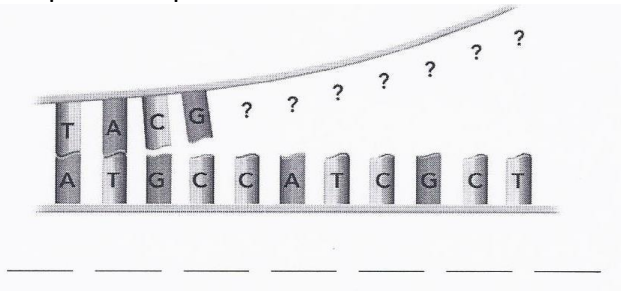
Chromosomes: a complete molecule of DNA packed up tightly and coiled into an X

Genes: chromosome(DNA) segment that determines a specific characteristic trait

DNA: located in cell nucleus and contains all genetic information. organized in a double helix structure

Nucleotide (Base pairs): made of two base pairs A-T, C-G

3. a- Complete the picture below.



G-T-A-G-C-G-A

b- What do the letters represent? Nitrogen base pairs

c- If you were to change the order of the letters, what would happen?

A different trait would be produced or a mutation could occur in the pairing of the DNA.

4. Why will an area with low population and few tourists result in an increase of certain diseases? **Because there is no genetic diversity so the disease will continue to be passed on (no adaptation to disease)**

5. Compare Meiosis and Mitosis:

Mitosis	Meiosis
<p>Growth and Repair 2n , Diploid, somatic 23 pairs of chromosomes 46 chromosomes 1 division 1 replication Results in two identical daughter cells</p>	<p>Production of Gametes N, haploid 23 chromosomes 2 divisions 1 replication Results in 4 daughter cells that are all different</p>

6. What are the definitions of the following:

Tissues	Group of specialized cells with the same structure and function
Organs	Several different tissues that are organized a specific way to carry out a specific function
Systems	Group of organs that work together to perform a task
Organisms	Made up of a series of systems that work together to keep the organism functioning

7. Fill in the table below

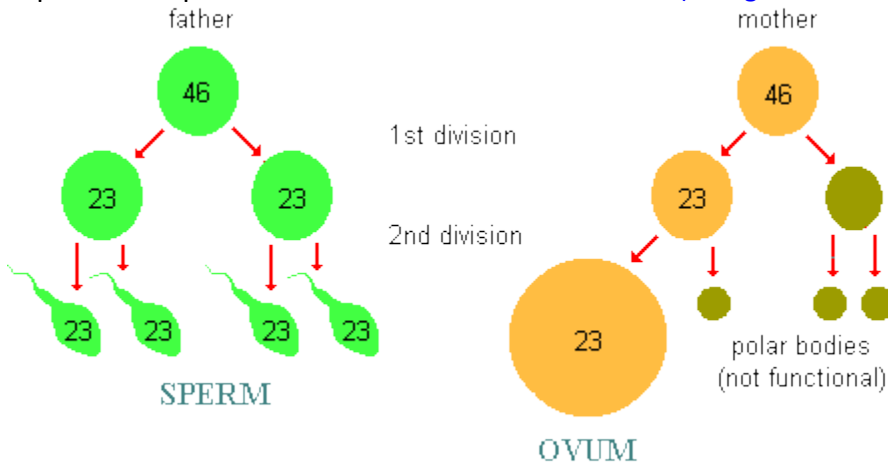
Secondary sexual characteristics in males only	Secondary sexual characteristics in females only	Secondary sexual characteristics in both
<p>Skeletal and Muscle growth Bone density increases Facial, underarm and pubic hair increases</p>	<p>Silhouette changes (fatty tissue accumulates/breasts and hips) Pelvis widens Underarm and pubic hair Sense of responsibility to reproduce</p>	<p>Physical attraction Libido Need for autonomy</p>

8. Place the following in order from smallest to largest:

Organ-Cell-Gene-Nucleus-Organism-System-Tissue-Chromosome

Gene-chromosome-nucleus-cell-tissue-organ-system-organism

9. Explain if the picture below is of mitosis or **meiosis**. (four gametes with 23 chromosomes)



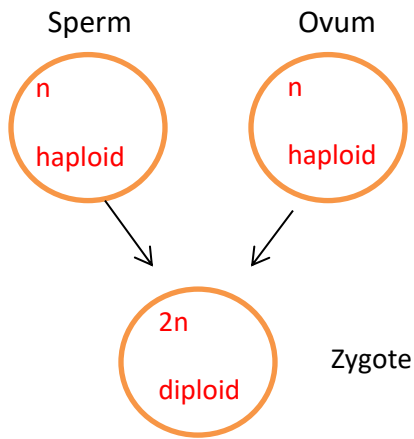
10. Fill in the table below of what happens during the days of the menstrual cycle.

1-5	6-14	15-28	14	1-13	11-14
Menstrual Phase (period)	Proliferation phase	Secretory phase	Ovulation	Oogenesis	Fertile period

11. Refer to the menstrual and ovarian cycles to answer the following:

- What is FSH responsible for? **The maturation of the follicle**
- What is LH responsible for? **Ovulation**
- What is progesterone responsible for? **Thicken the uterine lining**
- What is estrogen responsible for? **Causes LH to be secreted and thicken endometrium**

12. In each picture use the appropriate terms from the following list: 2n, n, diploid and haploid.



13. Define the following terms:

Puberty	All the physical, anatomical and physiological changes that occur in males and females between 10-14 years of age
Hormones	Chemical messengers that travel in the blood change and cause change
Corpus luteum	Remainder of the ruptured follicle which secretes progesterone
Oogenesis	Process of ovum production
Follicle	Contains the maturing ovum
Oocyte	Primary cell that undergoes meiosis to produce an ovum.

14. Fill in the table below:

Primary Sexual Characteristics of Females	Primary Sexual Characteristics of male
Menstrual cycle begins Genital organs mature	Testicles mature and lower

15. What are the hormones that trigger puberty and what are their functions in men and women?

FSH and LH ,
Stimulate maturity of ova, Stimulate production of female sex hormones (in women)
Stimulate production of spermatozoa, Stimulate production of male sex hormones (in men)

16. What are the four assisted reproduction techniques (include characteristics, pros and cons)?

Pros: same sex couples can have a child and infertile women can have a biological child

Cons: risks, multiple births, increase risk of birth defects, increased risk of ovarian cancer due to hormones, ethical issues regarding choosing embryos for their traits, costly, many medical appts.

Ovarian Stimulation-hormones to stimulate increased production of ovums and ovulation when a woman is not producing eggs, doesn't have a regular cycle

Artificial insemination- retrieving, washing of sperm and directly inserting it into the uterus. Used with ovarian stimulation when sperm count and mobility is too low or cervix is too acidic

In-vitro fertilization- collecting ovum and sperm and placing them in a petri dish together for fertilization outside the body-when other methods have not worked or fallopian tubes are damaged

Micro-Injection- similar to in vitro but sperm is injected directly into ovum.

17. What is genetic diversity? What factors influence genetic diversity?

Genetic diversity: the variation in genes among individuals of the same species

-large population

-Population mixing

- genetic recombination

Genetic mutations

18. If a somatic cell has 10 chromosomes, how many chromosomes would its sex cell have?

5 chromosomes