**Quiz 1 - YSP Biochemistry of the Gene - 6/24/2015 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. Fill in the name of process above each arrow.

DNA RNA PROTEIN

2. Albinism is a recessive trait in humans. What fraction of the offspring would be expected to be albinos in a mating in a mating between a man and a woman both of whom have one allele for albinism and one allele for normal skin pigmentation?

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ refers to having identical alleles for a single characteristic.

4. Describe or draw the eye shape, eye color, and bristle morphology of wild type *Drosophila melanogaster* and flies of the wsn strain.

5. Why are we removing the parents of cross 1 from the vials of flies today?

6. The human chromosomes we examined came from human \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ cells. (2 word answer)

7. How many pairs of chromosomes do normal humans have? \_\_\_\_\_\_\_\_\_\_

How many chromosomes should be present in a karyotype of a normal human? \_\_\_\_\_\_\_\_

8. On day 1 of the chromosome lab we added 20 l of colchicine solution to the blood cell culture. What does this do to the cells?

9. What caused the red blood cells to burst open during the harvesting of cells?

10. What Pipetman would you use to most accurately pipette 190 x 10-6 liters of water into a microcentrifuge tube?

12 Where is the bacterial chromosome located in the bacterial cell and why was that important for the plasmid lab procedure?

13. The target sequence and sites of cutting for BamHI and several other restriction enzymes are shown below. Which of these other enzymes will generate DNA fragments that can be ligated to DNA that is cut with BamHI? Circle all that apply.

Bam HI

5’ . . . GGATCC . . . 3’

3’ . . . CCTAGG . . . 5’

Sau 3a

5’ . . . GATC . . . 3’

3’ . . . CTAG . . . 5’

Spe I

5’ . . . ACTAGT . . . 3’

3’ . . . TGATCA . . . 5’

Bgl II

5’ . . . AGATCT . . . 3’

3’ . . . TCTAGA . . . 5’

Lst II

5’ . . . GGATCC . . . 3’

3’ . . . CCTAGG . . . 5’