

BIOLOGY 110
STUDY GUIDE #5

1. Diagram and explain how fats and proteins may be used by cells as energy sources. How much energy does 1 gram of fat and 1 gram of protein produce as compared to 1 gram of carbohydrate?
2. In detail, what is the difference between animals that are poikilothermic and those that are homeothermic?
3. Identify and define the two parts of cell division in vegetative cells.
4. Why is interphase different from the other stages of mitosis?
5. Describe the events that occur in each stage of mitosis.
6. Explain how cytokinesis is different in plant cells than in animal cells?
7. What is meiosis? How does it differ from mitosis? What is the purpose of The first meiotic division?
8. Define these terms: haploid, diploid, gametes, gonads, chromosome number, species, fertilization, zygote, homologues, synapses, tetrads, crossing over.
8. Describe the events that occur in Meiosis I and II.
9. 10. Define these terms:

Gregor Mendel	test cross
genes	test animal
alleles	breed true
dominant alleles	intermediate inheritance
recessive alleles	monohybrid cross
homozygous dominant	dihybrid cross
homozygous recessive	multiple alleles
heterozygous	antigens
genotype	antibodies
phenotype	agglutination
genotype ratio	blood type
phenotype ratio	A-B-O genotypes
erythroblastosis fetalis	Rh genotypes
autosomes	sex chromosomes
12. Know the genotype and phenotype ratios for all of the crosses stuiied in class including F1 and F2 for mono- and dihybrid crosses, test crosses, in intermediate inheritance.
13. List the genotypes for male and female sex chromosomes. What are the chances that an ovum will be fertilized by a Y spermatozoan?
14. How many autosomes and sex chromosomes does a human cell have? What is the difference between X and Y chromosomes?