**Genetics Test Review 2017 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per:\_\_\_\_\_\_\_\_**

The test on genetics will include information from Chapters 11-14 as well as section 34.4. Topics include DNA (structure, function and replication), RNA (structure, function, and protein synthesis), Reproduction, Meiosis, Mendelian genetics, Punnett squares, Pedigrees, and DNA fingerprinting (gel electrophoresis). Study your old labs, notes, reading questions, worksheets and problems!

**On Tuesday’s test you may use any notes written on THIS PAGE, front and back. REVIEW ALL THE VOCABULARY!! Write definitions for any words you don’t know.**

DNA—what does it stand for? What is its function in the human body? What chemicals form the basis of its structure? Know the parts of a nucleotide, what they’re made of and how a double helix is organized.

Chargaff’s rules—which N-bases pair together? How many and what type of bonds form between base pairs?

Watson, Crick, Franklin and Wilkins—know the basics of the discovery of DNA and the role of X-ray crystallography.

Know the process of DNA replication, the major enzymes involved and their specific roles. Where does it occur?

RNA—what is it? What chemical parts form its structure and what does it do in the human body?

Protein synthesis—know the steps, location of the processes in the body and the role of all 3 types of RNA.

Know how to transcribe and translate a section of DNA into a protein using the Amino Acid decoder ring.

Review the vocabulary in section 34.4 and the process of zygote formation and embryo development into a baby.

How are sperm and egg cells formed during Meiosis? Know the stages and the importance of forming correct gametes. Where can mistakes occur in the process? What happens in the embryo if these mistakes are passed on?

Know Mendel’s rules for gene assortment in pea plants (same for humans!).

Be able to draw and solve Punnett squares in cases of complete dominance, incomplete dominance, co-dominance and X-linked traits for monohybrid crosses.

Review human heredity and how we diagnose genetic abnormalities (karyotypes, pedigrees, gel electrophoresis).

Be prepared to interpret and solve Pedigrees in cases of Autosomal and Sex-linked disorders as well as recessive and dominant inheritance patterns. You’ll need to label carriers and fill in genotypes and phenotypes.

Know the steps of DNA gel electrophoresis and how/why we use it to separate DNA fragments.

Be aware of the differences in DNA fingerprinting to prove heredity or match a sample from a crime scene as compared to diagnosing genetic disorders in a family.

Be able to identify blood types and determine which can donate to the others. Tiger lab!