**Study Guide**

**Human Growth & Development**

**Genetics**

**This study guide is for your use in focusing on material and understanding that will be most profitable to know on the test. You need not turn it in, and it is not graded or extra-credited.**

1. What is a chromosome? What is DNA? Describe the DNA molecule.

2. How many chromosomes do human beings have? About how many genes are we believed to have?

3. What is an autosome? What is a gene? What is a genome?

4. What affects the expression or activity of genes?

5. What is the male pattern for the 23rd chromosomal pair? The female pattern?

6. What is a gamete and how many chromosomes does it have?

7. What is a zygote?

8. What percentage of DNA within the human race is identical?

9. What is the probability of occurrence of genetically identical, non-twin siblings?

10. What is an allele? What is the difference between heterozygous and homozygous?

11. What is the difference between a genotype and a phenotype?

12. In a heterozygous child, which allele determines the characteristic, dominant or recessive ?

13. What is a carrier?

14. What are co-dominant (or incomplete dominance) patterns of genetic inheritance?

15. What is different or unique about the 23rd pair of chromosomes?

16. Are male or female offspring more likely to show X-linked, recessive characteristics?

17. What is genetic imprinting?

18. What is polygenic inheritance?

19. Why do we have such a short list of conditions caused by chromosomal abnormalities? What is the best-known one?

20. What is fragile X, and what do we know about it?

21. You should be able to recognize the descriptions of Down, Klinefelter, and Turner syndromes.

22. How are identical twins different from fraternal twins? Which ones are monozygotic? How much of their genetic heritage do they share?

23. How early do environmental influences (nurture) start?

24. What is the difference between research in molecular and behavioral genetics?

25. What is a concordance rate?

**From the video:**

26. What is a CRISPR CAS9?

27. What is a genetic chimera?

28. What is the difference between germline and other genetic engineering?