The Eukaryote Genome and Its Expression

1. The Eukaryotic Genome

    A. The eukaryotic genome is larger and more complex than the prokaryotic genome
    B. Highly repetitive sequences contribute to chromosome structure and spindle attachment
    C. Telomeres are repetitive sequences at the ends of chromosomes
    D. Some moderately repetitive sequences are transcribed

2. The Structures of Protein-Coding Genes

    A. Protein-coding genes contain noncoding internal and flanking sequences

3. RNA Processing

    A. The primary transcript of a protein-coding gene is modified at both ends
    B. Splicing removes introns from the primary transcript

4. Transcriptional Control

    A. Specific genes can be selectively transcribed
    B. Genes can be inactivated by chromatin structure

5. Posttranscriptional Control

A. Different mRNAs can be made from the same gene by alternate splicing
B. The stability of mRNA can be regulated

6. Translational and Posttranslational Control

A. The translation of mRNA can be controlled
B. Protein function and lifetime can be regulated after translation