Final

Check Syllabus for time. 2hrs.

No Biotechnology Ch.19, Ch.22 Embryonic Genetics

\*Go Over PP

Not over 100.

Ch.2

Difference with pro and euk. Major characteristic of viruses, why different (Simple). Cell reproduction (functions, chromosomes, Mitosis/Meiosis, outcomes, cohesive(protein), . Cycle. Replication. Checkpoints.

DNA (structures, y perfect, first model, composition, difference with RNA) 2nd carbon. Base pairing. Hairpins. Chromosomal Structure. Supercoiling (+,-). Hetero(continuously condensed) and euchromatin. Histones. Nucleosomes. Chromatosomes.

Centromere, Telomere(functions). DNA sequences. Transposable elements (Who discovered it Barbara…). Terminal inverted repeats, direct flanking. Transposition (intermediates, replicate, non replicative). Bacteria. Insertion sequences-encodes transposais/ transposomes. Inverted terminal repeats. Composite transposomes.

DNA replication. Theta, Rolling Circle, etc. Replication. Where they occur. Types. Origins of replication. 5’-3’. Template. Substrates. Enzymes. Okazaki fragments. Leading strain (continuous), lagging strain. Initiation, Elongation, termination. Telomerase. Why we need telomeres.

Transcription (RNA). All pro and euk have mrnt. Template for it. Dna transcribed to RNA. Coding and noncoding strains. DNA transcription unit (promoters,coding sequence, and termination sequence). Termination sequence is transcribed. Polymerases (in bacteria). Initiation comlex. Nucleosomes. Rho factor (dependent or independent). Promoter in bacteria. TATA box. 2 promoters (core and regulatory). General Transcription factors. Eukaryotes don’t have Ssequence. Kozak sequence. Elongation. Termination (RAT1 protein).

RNA. Classes. Colinearity bacteria(are the same) and euk. Introns and Exons. 5’ head methylation. Modifications. Splicing (5’3’ adenine). Automatic splicing. Modification. 3’ cleavage. RNA editing. Basic characteristics. Si and micro RNA.

Protein. Structures. Codons 64 codons. Initiation codons. Wobble (more codons than anticodons). Reading frames. Polyribosomes. Asite, Psite. Processes of Initiation elongation and termination (factors). Mutations.

Gene Expression. Bacteria and euk. Regulatory genes and sequences. Expressions. Transcription factors. Operon (bacteria, composed of promoter, operator, and protein coding sequence). – inducible repressible etc. Euk levels of regulation. Histone acetylation. Methylation.

Mutations. Levels (phenotypic). Insertion or deletion, frameshift mutations. Base analogs.repair mechanisms.

Cancer. Protooncogene, tumor suppressor. Cell signaling. P53. Retinoblatoma.