Genetics Exam 3

Ch’s 3,4,5,6,8,25

CH.3 Inheritance -

Basic principle of heredity, terms (dominant, recessive, incomplete dominance (in-between 2 phenotypes), etc.)

Mendel-contribution, successful, perfect methodology, formulation and laws (segregation, independent assortment) etc. Generations, ratios (phenotypic, genotypic). Dihybrid crosses. Chromosomal recombination and independent assortment differences. Crosses. Inheritance using punnet square (monohybrid). Know Pi Square. Probability (multiplication and addition rules (either/or)).

Ch. 4 Sex Link Chracterisitics-

Chromosomal, Genetic, etc. Multiple systems (XXXO,XX,XXXY,ZZY, XO= female) homogametic =male. Hetero= female. Haploid/diploid system. Pseudoautosomal regions. Male=SRY genes. XO= Turners syndrome. XXY= Kleinfetlers. Female XXX exceptional, more = retardation. Non-disjunction chromosomes. X-link characteristics= more prevalent in males b/c mother. Color blindness, hemophilia. Mendelian inheritance. Co-dominance=blood group system (ABO system). Epistasis. Environment in genotype. Polygenic Inheritance. Cytoplasm inheritance= in mitochondria of DNA. Genomic Imprinting= whether inherited from mother or father. Epigenetic modification. Solve ABO

Ch.6 Pedigree Analysis-

Pedigree (family tree, symbols), twin studies, and adoption studies. Proband. Autosomal Recessive/ Dominant= does not skip generations. X link mostly in males. Y only in females. X link thread cannot be given from father to son. X chromosome from mother. X link recessive. Concordance/Discordance (environmental= concordance similar)=Monozygotic= identical.

Ch.7 Linkage-

What are linked genes? Recombination. Maximum percent = 50% in recombination. Repulsion positions, cup link, cis/trans positions= affects father generation. Annotation of link genes. A and B completely linked= no recombination= 1AB:1ab. 3 point crosses (Which is not possible genotype).

Ch. 8 Bacterial and Viral Genetics-

Bactria can transmit horizontal transmission. Plasmid. Replication=independently of bacterial DNA. Conjugation (F+ F-= F+), transformation, transduction. F factor. Origin of replication, transfer, gene integration. Hfr. F’ cells. Hfr + F-= nothing happens. Bactriophages litic cycle and lysogenic. Transductions (generalized happens in lytic other in lysogenic cycle). Virus. Retrovirus’. Enzyme= Transcriptase.