Biology Exam 2 Cheat Sheet

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Mono-hybrid Cross Ratio

Ratio	3:1

2 Types of Respiration

Respiration	Breathing
Cellular Respiration	Making ATP

Cellular Respirtation

glucose is broken down to carbon dioxide and water and the cell captures some of the released energy to make ATP

Equation: Glucose + Water -> Carbon Dioxide + Water + ATP

Aerobic Respiration vs. Anaerobic Respiration

Aerobic Respiration	a process that uses oxygen
Anaerobic Respiration	a process that doesn't use oxygen

two forms of cellular respiration.

Aerobic Respiration vs. Anaerobic Respiration

Aerobic respiration	a process that uses oxygen, takes place in the cytoplasm and the mitochondria, most effeciant
Anaerobic espiration	a process that doesn't use oxygen, takes place in the cytoplasm and the mitochondria, least effeciant

two forms of cellular respiration.

Redox Reaction

Reduction	**gaining** electrons
Oxidation	the **loss** of electrons

Citric Acid Cycle

Where are the enzymes for the citric acid cycle located?	Matrix and Inner Membrane

Reproduction

Asexual Reproduction	produces offspring that are identical to the original cell, or organism and involves inheritance of all genes from one parent
Sexual Reproduction	produces offspring that are similar to the parents but show variations in traits and involves inheritance of unique sets of genes from 2 parents.

Mendel studied what most?

plants

Transfer RNA molecule

amino acids

Cancer

normal body cells that undergo genetic mutations, lose the ability to control the tempo of their own division, and run amok, causing disease

Codons

A codon is a sequence of three DNA or RNA nucleotides that corresponds with a specific amino acid or stop signal during protein synthesis. DNA and RNA molecules are written in a language of four nucleotides; meanwhile, the language of proteins includes 20 amino acids.

AUG-start codon

X Linked Genes-

are recessive

Over All Genetic Flow

DNA->RNA->Protien

Tumors

Benign	remain at the original site
Malignant	spread to other locations called **metastasis**

Chromosomes

Autosomal chromosomes pairs	(1-22)
Sex Chromosome	23rd Pair, only mutations in the sex cells can be passed on to offspring
Homologus Chromosomes	are matched in length, centromere position, and gene location.

Transcription vs. Replication

Transcription	copies the DNA into RNA
Replication	makes another copy of DNA

Purines vs. Pyrimidines

Purines	The two-carbon nitrogen ring bases (adenine and guanine)
Pyrimidines	The one-carbon nitrogen ring bases (thymine and cytosine)

Mitosis vs. Meiosis

Mitosis	only has one round of each and the daughter cells are identical to the parent as well as to each other
Meiosis	has two rounds of genetic separation and cellular division and homologous chromosomes separate leading to daughter cells that are not genetically identical.

Base Pairing Rules

A with T (DNA)	the purine adenine (A) always pairs with the pyrimidine thymine (T)
C with G (DNA)	the pyrimidine cytosine (C) always pairs with the purine guanine (G)
A with U (RNA)	thymine is replaced by uracil (U)

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