

DEFINE morphogenesis
DEFINE apoptosis
DEFINE insertion sequence
DEFINE transposon
DEFINE prophage and provirus
DEFINE phage
DEFINE phosphorylation
STATE that most signal molecules are water soluble and bind to receptors on the plasma membrane
STATE that testosterone (a steroid) is a lipid soluble chemical messenger
STATE chemical signaling is present all 5 kingdoms
STATE that any deviation in the normal chemical signal pathway can alter the cell's response
STATE the most source of genetic diversity in a bacterial colony
STATE the percentage of DNA in humans that codes for proteins or functional RNA
STATE where/how gene regulation is primarily regulated in both prokaryotes and eukaryotes
LIST the three stages of cell signaling in order
LIST the ways in which sexual life cycles increase genetic variation in species
LIST ways in which a frameshift mutation could occur
LIST all components of a eukaryotic gene including its regulatory components
LIST the requirements of natural selection
LIST the steps of signal transmission in at a chemical synapse between neurons
OUTLINE the steps of signal transduction
OUTLINE the role of adenylyl cyclase
OUTLINE phosphorylation
OUTLINE why viruses are obligate parasites
OUTLINE the lytic and lysogenic cycles
OUTLINE the role of reverse transcriptase in retroviruses
OUTLINE transduction, conjugation and transformation
OUTLINE what the operon model attempts to explain
OUTLINE the role(s) of each component in an operon
OUTLINE how euchromatin and heterochromatin is involved in gene regulation
OUTLINE how steroid hormones produce their effects in cells
OUTLINE the role of RNAi
OUTLINE the effects or the products of the p53 gene
OUTLINE the role of tumor suppressor genes
OUTLINE how an organism achieves cellular differentiation
OUTLINE the MyoD protein
DESCRIBE the signal transduction pathway involving epinephrine
DESCRIBE the cellular communication pathway involving testosterone
DESCRIBE transcription factors
DESCRIBE the characteristics of cancer cells
DESCRIBE crossing over
DESCRIBE a Hfr bacteria
DESCRIBE inducible and repressible operons (in general)
DESCRIBE the lac operon (specifically)

DESCRIBE how the signal transduction pathway is amplified
DESCRIBE plant defenses against herbivores (include both physical and chemical defenses)
DESCRIBE blood glucose regulation in humans
COMPARE specialized and generalized transduction
COMPARE euchromatin and heterochromatin
COMPARE cell signaling pathways of water and lipid soluble pathways
DISCUSS how the MyoD protein was used in research (limited to powerpoint)
DISCUSS why the incidence of cancer rises with age
DISCUSS what makes a muscle cell different from a nerve cell (in general)
EXPLAIN natural selection
PREDICT the gametes that would result from non-disjunction in either meiosis I or II
PREDICT the type of chromosomal mutation that occurred given a description of a chromosome before and after
EVALUATE the severity of different mutations on the protein it specified