# TOP 80 MOST COMMON IB BIOLOGY QUESTIONS



Outline the cell theory exceptions

Explain how stem cells are used to treat Stargardt's and another illness

Discuss the advantages and disadvantages of stem cells

Distinguish between prokaryotic and

eukaryotic cells (remember organelles functions!!)

Outline the Cell cycle phases, describe the occurrences in each

Outline the stages of Mitosis

**Outline the process of Transcription** 

Explain DNA replication and translation

Deduce DNA sequences from mRNA

Identify cell respiration reactants and products

# Describe the different stages of cell respiration

Distinguish between aerobic and anaerobic cell respiration

Outline how the genetic code is universal

Identify Gene mutations, and give a specific example of a mutation (Sickle cell anaemia)

Outline the Gel electrophoresis process and how it is used in paternity and forensic investigations

# Outline the mechanism of Somatic Nuclear transfer

Explain polymerase chain reactions.

Outline the pros and cons of GMO.

Explain carbon fluxes and how it impacts coral reefs

Analyse data atmospheric carbon data

Outline how peat is formed

Explain how greenhouse gases impact the

atmosphere and climate change

Distinguish between the long wave and short wave radiation

Explain atmospheric carbon dioxide levels can affect coral reefs.

Explain the 3 requirements for evolution

Discuss the role of natural selection in evolution

Explain how antibiotic resistance in prokaryotes is a form of evolution.

Outline the traits unique to organisms of each phyla, include examples!

Classify an animal using the taxonomy classification.

Using a cladogram, identify which species are most closely related

Define analogous and homologous traits

Describe structure and function of: villi, microvilli and the small intestine.

Identify the parts of the small intestine on a micrograph

Outline how nutrients are absorbed via the digestive tract

Explain the development of antibiotic resistance in bacteria

Describe the role of Florey and Chain's experiments in the development of penicillin

Explain the formation of antibodies

Explain the role of melatonin and the pineal gland in jet lag

Explain the role of leptin in obesity

Outline the menstrual cycle and the role of negative feedback

Explain the role of enzymes in DNA replication

Distinguish between the lagging and leading strand

Describe the role of nucleosomes during DNA replication.

Explain the process of transcription.

Describe the role of splicing to increase the number of proteins a gene can form.

Identify the tRNA structure and function.

Outline the primary, secondary, tertirary and tertiary levels of protein structure.

Distinguish between the different types of enzyme inhibitors

Be able to analyze graphs analyzing enzyme reaction rates

Explain cell respiration, including glycolysis, Kreb cycle and chemiosmosis phosphorylation.

Be able to recognize where oxidation, decarboxylation, phosphorylation and

reduction happens in biochemical reactions.

Explain the light dependent reactions of photosynthesis

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Explain Calvin's lollipop experiment

Describe the process of transpiration.

Outline the factor affecting transpiration.

Outline xerophyte and halophyte adaptations

Explain the role of auxin in cell growth.

Outline the process of micropropagation.

**Outline seed dispersal** 

Explain the process of fertilization.

Describe the role of phytochrome in flowering.

Explain how different factors affect germination.

Identify the location of chiasmata in a diagram

Solve crossover problems through chromosomes diagrams.

Outline the steps of meiosis.

Solve dihybrid cross using punnett squares, solve for genotype and phenotype

Identify examples of polygenic trait.

How are genes expressed and how they impact the biodiversity.

Explain how new species evolve.

Differentiate between directional, stabilizing and disruptive selection.

Differentiate between temporal, behavioral or geographic

Explain how bacteria resist antibiotics.

Explain the production of antibodies

Outline the process of an allergic reaction

Explain monoclonal antibody production.

Describe the structure of a sarcomere.

Explain the sliding filament theory.

Identify and describe the role of each part of the nephron.

Explain the process of ultrafiltration in the glomerulus.

Outline how ADH impacts water reabsorption

Compare and contrast the blood in the renal artery and veins