

Microbiology task assignment



Western Governor's University Process of DNA Replication The double helix is unwound by helicases & each strand then acts as a template for the next strands Primase creates the DNA primer DNA polymerase III is the main copying enzyme DNA polymerase I removes RNA primers & replaces with DNA Single Stranded Binding Proteins are available to hold the unwound DNA strands in position & prevents premature annealing with another DNA strand

Diagram of DNA Replication Role of DNA Polymerase III in the Replication of DNA DNA polymerase III initiates the replications next to primer & adds

complementary nucleotides in the 5' to 3' direction & moving away from the replication fork Okazaki fragments are the short lengths of DNA formed between RNA primers on the lagging strand DNA Ligase is the linking enzyme that seals

breaks in the DNA by creating a phosphate-sugar bond. DNA ligase has three (3) main functions: 1. Joining Okazaki fragments, 2. Aiding repairs, 3.

Sealing recombination fragments Diagram of Role of DNA Ligase in DNA

Replication Role of mRNA in Transcription & Translation mRNA "copies" the message or the information from DNA mRNA then leaves that DNA parental strand & "hooks" up with ribosome Ribosome works with the mRNA & "calls" for tRNA then "reads" the mRNA in codes & brings amino acids to the mRNA. Amino acids then attach to the transfer molecule & create a protein chain

Diagram of mRNA in Transcription & Translation

Role of RNA Polymerase Inhibition RNA polymerase makes a new strand of RNA which is peeled off the DNA template and translated into protein by Copying DNA in order to transport information to ribosome for protein synthesis Without RNA the cell is unable to synthesize proteins Proteins are the building blocks of life Without proteins there would be cellular death If

ingested the peptide alpha-amanita formed by the death cap mushroom attaches to RNA & prevents protein synthesis by inhibiting RNA Polymerase production

Without RNA Polymerase, the body cannot produce Mrs. Without Mrs. the body will not be able to create a template for transcription Poisonous Effect of Death Cap Mushrooms Without a template for transcription the body will not generate new DNA & the body will soon begin to fail Without new cellular generation the body will die Most people will fall into a coma & death occur within one (1) week of ingestion RNA polymerase (2003). [Http://www. Arcs. Org/PDP/education_discussion/ molecule_of_the_month/ download/Reemployment's. PDF](http://www.Arcs.Org/PDP/education_discussion/molecule_of_the_month/download/Reemployment's.PDF) References