Ch 17.2 Notes

---------------------------------------------------------------------------------------------------------------------

Vocab

---------------------------------------------------------------------------------------------------------------------

RNA Polymerase: An enzyme that pries two string of DNA apart  
Promoter: The DNA sequence where RNA polymerase attaches and initiates transcription  
Terminator: The sequence that signals the end of transcription  
Transcription Unit: The stretch of DNA downstream from the promoter that is transcribed into an RNA molecule

Start Point: The promoter of a gene includes within it the transcription  
Transcription Factors: A collection of proteins that mediate the binding of RNA polymerase and the initiation of transcription

Transcription Initiation Complex: The whole complex of transcripwtion factors and RNA polymerase II bound to the promoter  
TATA Box: A sequence of DNA found in the core promoter region of genes in archaea and eukaryotes

---------------------------------------------------------------------------------------------------------------------

Notes

---------------------------------------------------------------------------------------------------------------------

RNA polymerase (no primer needed like DNA polymerase)

* Eukaryotes have 3 different kinds
* Prokaryotes have 1 kind

Promoter

* Where RNA polymerase binds

Initiation

Promoter

* Has start site
* TATA box
* Transcription factors bind to TATA box
* RNA Polymerase binds to complex
* More transcription factors bind
* Transcription initiation complex now formed

RNA polymerase goes to work now

* Unwinds DNA
* Starts transcription at start point of template strand

Elongation

RNA polymerase keeps untwisting DNA and making primary transcript

Adds to 3’ end

Multiple RNA polymerases can transcribe same gene at the same time (staggered)

* Make lots of protein at once

Termination

Bacteria

* Terminator sequence
* RNA polymerase detaches once makes RNA terminator sequence
* No modifications before translation

Eukaryotes

* Polyadenylation sequence (AAUAAA) gets bound by proteins as soon as it’s made
* Proteins cut transcript free 10-35 nucleotides after sequence
* Process primary transcript before getting translated