Name:_____ Unit:_____ Date:_____ Pd:____

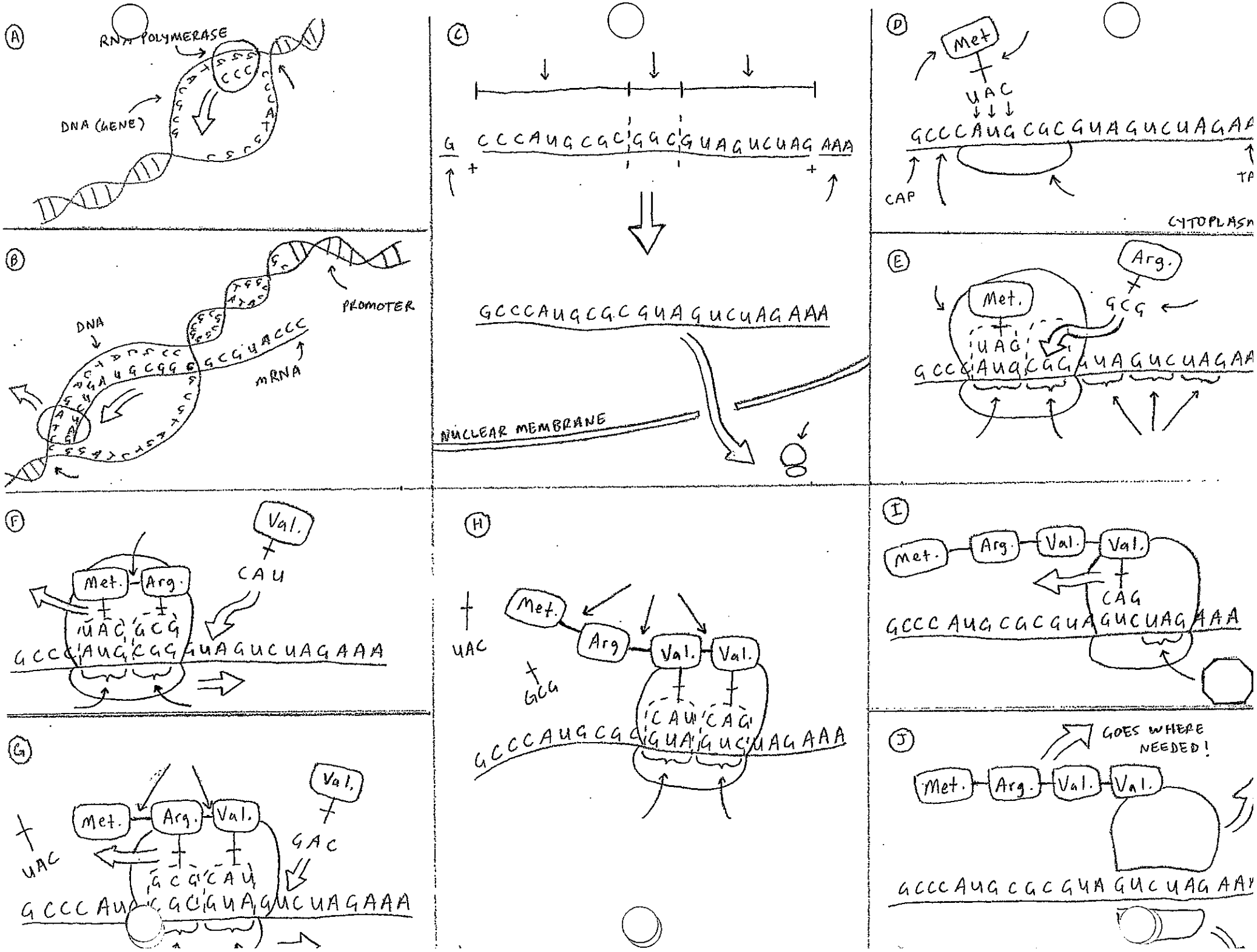
NOTES – PROTEIN SYNTHESIS

Honors Biology

Directions:

1. Use the textbook to write the names of the steps and substeps of protein synthesis in the blank boxes.
2. Add all bolded and underlined terms to your note template (skinny arrows).
3. Add the number of each step to your note template in **all** locations where it is depicted.

		1. RNA polymerase attaches to **promoter** region on DNA
		2. RNA synthesis begins
		3. RNA strand grows longer
		4. Previously opened segments of DNA close as new ones open
		5. RNA polymerase reaches **terminator** region and detaches from DNA and RNA
		6. A **G cap** and poly **A tail** are added to mRNA strand
		7. **Introns** are removed and leftover **exons** are spliced together
		8. mRNA leaves nucleus, enters cytoplasm, and attaches to a **ribosome** (at the **small ribosomal sub-unit**)
		9. An **initiator tRNA** brings the **amino acid** "methionine" into position on **mRNA strand** and **large ribosomal sib-unit** attaches, putting initiator tRNA in the **P site**
		10. A second tRNA with an **anticodon** complimentary to the next mRNA **codon** binds to **A site** on ribosome
		11. A **peptide bond** forms between the amino acid at the **P site** and the one at the **A site**
		12. The tRNA at the P site breaks off from the mRNA and its amino acid and leaves the ribosome
		13. The ribosome moves down the mRNA strand to the next codon and repeats steps 10-13 until...
		14. A **STOP codon** is reached, the mRNA, ribosomal sub-units, and polypeptide chain detach from one another


A
RNA POLYMERASE
DNA (GENE)
B
DNA
PROMOTER
mRNA
C
G CCCAUGCGCGCGUAGUCUAG AAA
GCCCAUGCGCGUAGUCUAGAAA
NUCLEAR MEMBRANE
D
Met
UAC
GCCCAUGCGCGUAGUCUAGAA
CAP
CYTOPLASM
E
Arg.
Met.
GCG
UAC
GCCCAUGCGCGUAGUCUAGAA
F
Val.
CAU
Met.
Arg.
UAC
GCG
GCCCAUGCGCGUAGUCUAGAAA
G
Val.
Met.
Arg.
Val.
UAC
GAC
GCGCAU
GCCCAUGCGCGUAGUCUAGAAA
H
Met.
Arg
Val.
Val.
UAC
GCG
CAU
CAG
GCCCAUGCGCGUAGUCUAGAAA
I
Met.
Arg.
Val.
Val.
CAG
GCCCAUGCGCGUAGUCUAGAAA
J
GOES WHERE NEEDED!
Met.
Arg.
Val.
Val.
GCCCAUGCGCGUAGUCUAGAA