

## Chemguide – questions

### DNA: THE GENETIC CODE

1. The table below (taken from the Chemguide page) shows the three-base combinations used to code for the various amino acids in messenger RNA chains.

		second base in codon				
		U	C	A	G	
U	U	UUU Phe	UCU Ser	UAU Tyr	UGU Cys	U
	U	UUC Phe	UCC Ser	UAC Tyr	UGC Cys	C
	U	UUA Leu	UCA Ser	UAA stop	UGA stop	A
	U	UUG Leu	UCG Ser	UAG stop	UGG Trp	G
C	C	CUU Leu	CCU Pro	CAU His	CGU Arg	U
	C	CUC Leu	CCC Pro	CAC His	CGC Arg	C
	C	CUA Leu	CCA Pro	CAA Gln	CGA Arg	A
	C	CUG Leu	CCG Pro	CAG Gln	CGG Arg	G
A	A	AUU Ile	ACU Thr	AAU Asn	AGU Ser	U
	A	AUC Ile	ACC Thr	AAC Asn	AGC Ser	C
	A	AUA Ile	ACA Thr	AAA Lys	AGA Arg	A
	A	AUG Met	ACG Thr	AAG Lys	AGG Arg	G
G	G	GUU Val	GCU Ala	GAU Asp	GGU Gly	U
	G	GUC Val	GCC Ala	GAC Asp	GGC Gly	C
	G	GUA Val	GCA Ala	GAA Glu	GGA Gly	A
	G	GUG Val	GCG Ala	GAG Glu	GGG Gly	G

- a) What three letter combinations code for lysine (Lys) in a messenger RNA chain?
- b) What three letter combinations code for glycine (Gly) in a *DNA* chain?
- c) The messenger RNA code below is for a small part of a polypeptide chain. Identify the amino acid sequence in this part of the polypeptide chain.

UCUAAUGCAUUGACCUCUCGUUAG