

**WGU C785 BIOCHEMISTRY FINAL OA EXAM 2023-2024
REAL EXAM QUESTIONS AND CORRECT
ANSWERS|AGRADE(COMPLETE EXAM)**

1. What is the complementary sequence to 3' ATG CGA ATA 5'? *

1/1

3' TAT TCG CAT 5'

3' TAC GCT TAT 5'

3' GAT AGC ATA 5'

5' ATA AGC GTA 3'

Feedback

The correct answer is 3' TAT TCG CAT 5'. Remember complementary means "Matching or Pairing" You have to remember to pay attention to your numbers as well as your letters (A-T, G-C, 5'-3'). The correct answer is

3' ATG CGA ATA 5' (original sequence)

5' TAC GCT TAT 3' (complementary sequence)

But we asked for it in the 3' direction, so mirror answer to give correct answer:

3' TAT TCG CAT 5'

2. Which amino acid sequence would result from this Coding DNA strand? 3' ATG CAG ATA 5'? *

1/1

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		Second Letter											
		U		C		A		G					
1st letter	U	UUU Phe	UCU Ser	UAU Tyr	UGU Cys	UUA Leu	UCC Ser	UAA Stop	UGC Cys	UAG Stop	UGA Stop	UGG Trp	U C A G
	C	CUU Leu	CCU Pro	CAU His	CGU Arg	CUA Leu	CCC Pro	CAA Gln	CGC Arg	CUA Leu	CCA Gln	CGA Arg	C A G
	A	AUU Ile	ACU Thr	AAU Asn	AGU Ser	AUA Ile	ACC Thr	AAA Lys	AGC Ser	AUA Ile	ACA Thr	AGA Arg	U C A G
	G	GUU Val	GCU Ala	GAU Asp	GGU Gly	GUA Val	ACG Thr	AAG Lys	AGG Arg	GUA Val	GCA Ala	GAA Glu	G G G

Tyr Val Tyr
Ile Gln Ile
Ile Asp Val

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Leu His Lys

Feedback

The correct answer is Ile Asp Val. We are starting at the coding strand, and have to remember the relationship between coding DNA and mRNA. These two strands are non-complementary and parallel. So we copy the coding strand, change T ---> U, and then write the mRNA sequence:

3' ATG CAG ATA 5' coding

3' AUG CAG AUA 5' mRNA

Mirror by changing orientation: 5' AUA GAC GUA 3'

Read chart Ile Asp Val (chart is in direction of 5' ---> 3')

3. Which amino acid sequence would be made from this template DNA strand? 5' TAT TAC CGA 3'? *

0/1

		Second Letter					
		U	C	A	G		
1st letter	U	UUU Phe UUC UUA Leu UUG	UCU UCC Ser UCA UCG	UAU Tyr UAC UAA Stop UAG Stop	UGU Cys UGC UGA Stop UGG Trp	U C A G	
	C	CUU CUC Leu CUA CUG	CCU CCC Pro CCA CCG	CAU His CAC CAA Gln CAG	CGU CGC Arg CGA CGG	U C A G	
	A	AUU AUC Ile AUA AUG Met	ACU ACC Thr ACA ACG	AAU Asn AAC AAA Lys AAG	AGU Ser AGC AGA Arg AGG	U C A G	
	G	GUU GUC Val GUA GUG	GCU GCC Ala GCA GCG	GAU Asp GAC GAA Glu GAG	GGU GGC Gly GGA GGG	U C A G	

Tyr Tyr Arg

Ile Met Ala
Ser Val Ile
Ser His Gln

Correct answer

Ser Val Ile

Feedback

The correct answer is C because

5' TAT TAC CGA 3' template is complementary and antiparallel so

3' AUA AUG GCU 5' but it is in the wrong orientation, so mirror

5' UCG GUA AUA 3' and read the chart

Ser Val Ile

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4. Which of the following are the correct components for a PCR reaction? *

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dNTPs, Primer, RNA Polymerase, template RNA

dNTPs, Primer, DNA Polymerase, template DNA

ATP, Primer, mRNA polymerase; template mRNA

Acetyl CoA, RNA primer, DNA Ligase, Template phosphate

Feedback

The correct answer is b

5. If you had a mother who is homozygous for a recessive disease, and a father who is a heterozygous carrier, what percentage of children will have the disease? *

1/1

0%

25%

50%

75%

100%

Feedback

The correct answer is c 50%

Homozygous recessive: aa

Heterozygous: Aa

6. Which of the following would represent a silent mutation if this is the original sequence: 5' AUC GUA ACA 3'? *

1/1

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