Develop 3 reverse ORF Frames for the given DNA sequence. Consider the residues specified by Uppercase are exons (Apply splicing ) Sequence: “5’atggtgCAATTGCATTCCTGTGGGTTACTGCytnTGGGGCAA GGTGaac 3’ “ Show the stepwise result.

Input:

“5’atggtgCAATTGCATTCCTGTGGGTTACTGCytnTGGGGCAA GGTGaac 3’ “

Step 1 - Splicing: CAATTGCATTCCTGTGGGTTACTGCTGGGGCAAGGTG

Step 2 - Complement: GTTAACGTAAGGACACCCAATGACGACCCCGTTCCAC

Reversed strand: CACCTTGCCCCAGCAGTAACCCACAGGAATGCAATTG

Step 4 - mRNA CACCUUGCCCCAGCAGUAACCCACAGGAAUGCAAUUG

CAC CUU GCC CCA GCA GUA ACC CAC AGG AAU GCA AUU G

H L A P A V T H R N A I

Reverse frame1: HLAPAVTHRNAI

ACCUUGCCCCAGCAGUAACCCACAGGAAUGCAAUUG

Reverse frame2: TLPQQ\*PTGMQL

CCUUGCCCCAGCAGUAACCCACAGGAAUGCAAUUG

Reverse frame3: PCPSSNPQECN

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Consider the given DNA sequence specified by Uppercase are exons (Apply splicing). Apply transcription. Also find out 3 reverse ORF frames. Show the stepwise generated sequence. Write the bio-python code for the same.

Sequence: 3’ATGAAAAtttcAAGCaaggtATCGGaaaaTACACCG aaggtGCCG 5’

Code:

from Bio.Seq import Seq

coding\_dna = Seq("ATGAAAAAAGCATCGGTACACCGGCCG")

print("After splicing:",coding\_dna)

coding\_dna1 = coding\_dna.complement()

print(coding\_dna1)

messenger\_rna = coding\_dna1.transcribe()

print("mRNA")

print(messenger\_rna)

print("Reverse frame1:")

coding\_dna = messenger\_rna

#coding\_dna = Seq("ATGAAAAAAGCATCGGTACACCGGCCG") #messenger\_rna[::]

print(coding\_dna.translate())

print("Reverse frame2:")

coding\_dna = Seq("TGAAAAAAGCATCGGTACACCGGCCG") #messenger\_rna[::]

print(coding\_dna.translate())

print("Reverse frame3:")

coding\_dna = Seq("GAAAAAAGCATCGGTACACCGGCCG") #messenger\_rna[::]

print(coding\_dna.translate())

**OUTPUT:**

After splicing: ATGAAAAAAGCATCGGTACACCGGCCG

TACTTTTTTCGTAGCCATGTGGCCGGC

mRNA

UACUUUUUUCGUAGCCAUGUGGCCGGC

Reverse frame1:

YFFRSHVAG

Reverse frame2:

\*KKHRYTG

Reverse frame3:

EKSIGTPA