**Question 1: List the standard alphabets defined in sym.py (e.g. Bool\_Alphabet). Please ensure your spelling is correct and your answers are separated by a comma (,).**

Bool\_Alphabet, DNA, RNA, DNAwN, RNAwN, Protein, ProteinwX, ProteinwSTOP, ProteinwGAP, DSSP\_Alphabet, DSSP3\_Alphabet

**Question 2A: List the 'special' functions from the Sequence class. Just enter the function name, for example, for \_\_len\_\_(self) just enter \_\_len\_\_**

\_\_init\_\_, \_\_len\_\_, \_\_str\_\_, \_\_iter\_\_, \_\_contains\_\_, \_\_getitem\_\_

**Question 2B: Provide an example (in text, not code) of the use of each function from Question 2A**

\_\_init\_\_: Create a sequence with the sequence data. Specifying the alphabet, name and other information about the sequence are all optional. The sequence data is immutable (stored as a string).

**Question 3A: How many different types of identifiers are assocated with the sequences in mystery2.fa? To answer this, submit the first two letters common to the identifiers.**

NP, XP

**Question 3B: Which databases do the identifiers from Question 3A map to?**

Ensembl, uniport

**Question 4A: How many entries are in sigpep\_at.fa?**

1852

**Question 4B: How many entries are in lipmet\_at.fa?**

153

**Question 5: How many TAG lipases did you find?**

7

**Question 6A: Describe the physico-chemical properties represented by each default colour used in the alignment (including the white/uncoloured amino acids).**

green: Nonpolar(G), Nonpolar(C), Nonpolar(P), Nonpolar(F), Nonpolar(W), Nonpolar(I), Nonpolar(L), Nonpolar(M), Nonpolar(V), Nonpolar(A)

#66bbff: Polar(S), Polar(T), Polar(Y), Polar(N), Polar(Q)

red: Basic polar(H), Basic polar(K), Basic polar(R)

orange: Acidic polar(D), Acidic polar(E)

**Question 6B: Show your own 'hydrophobic' colour scheme (as a list of affected amino acids)**

blue(hydrophobic): V, I, L, F, W, Y, M

otherwise white

**Question 6D: Provide the rough boundaries of the fifth transmembrane domain. Enter your boundaries in the following format : 10 – 30**

290-310