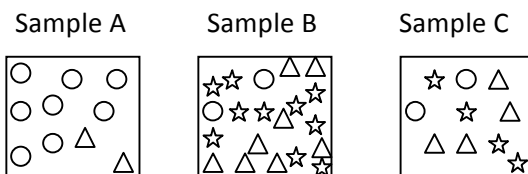


Practice exam questions:

- 1) What is the “great plate anomaly”?
- 2) What is alpha diversity? What is beta diversity?
- 3) What is metagenomics “binning”? What makes binning difficult?
- 4) How is metagenomics different to genomics?
- 5) Given the environmental samples A, B, and C below and assuming that each type of shape is a individual species (<97% identity in the 16S): Create an OTU table, calculate the alpha diversity of each sample using the Shannon Index, and find which sample has the highest diversity.



- 6) If you compared nucleotide similarity, protein similarity, and protein structure similarity for the same two genes, which one would likely report the highest similarity score?
- 7) Name and describe three methods for protein structure prediction.
- 8) Describe the differences between primary, secondary and tertiary protein structures.