

## Example Final Questions

- *Note: these questions will not be used on the exam! Don't waste brain cells trying to memorize a response to these particular questions! They are meant to serve as examples of what you may see on the Final.*
- *When answering essay questions you are encouraged to draw from any source of knowledge, not necessarily course lectures and required reading, but any experiences, outside reading, background knowledge or logic to craft your response.*
- *Use the space that is provided to write. I am expecting 1-2 paragraphs to a full page. Write clearly, use editing marks if necessary. Do not draw arrows everywhere. Making it difficult to read only makes it harder for me to follow your logic and give you partial credit.*
- *There should be more than enough time to write out answers 3 (+the extra credit) questions. Outline it on scratch sheets (provided) so when you go to write, it will convey your thoughts clearly.*
- *I will not take off for grammar or spelling errors, BUT the better written an answer is, the easier it is for me to read and grade :)*

- 1) The HMS Challenger expedition was a forerunner of modern deep-sea exploration. What techniques or equipment are still in use today that was pioneered in the late 19<sup>th</sup> century? How did the search for the answers of Wyville Thompson's "big questions" change our view of the deep sea environment?

- Answering tips: You would need to know what equipment was used on the Challenger. Do we still use this equipment? For the second part, you need to know what Wyville's big questions were for the Challenger expedition and how the debunking of each shaped our understanding of current deep-sea biology. You would not need to know all four to get full credit, but to demonstrate that you understand what was thought before the expedition, how the paradigm changed because of the expedition and what mean for how we see that particular aspect of deep sea biology today.

- 2) Describe what seamounts are and how they form over geologic time? How do marine animals respond to the seamounts? Do seamounts contain a unique assemblage of species, or not? Support your answer with at least three lines of evidence.

- Answering tip: You need to know that seamount have volcanic origin and subside as the heat source gets cut off. The second part is asking you to recall how currents flow around seamounts and aggregate nutrients (upwelled from the deep-sea) and plankton overhead. You would also need to describe how what that means for macrofauna at seamounts (i.e. increased biomass at seamounts relative to the background deep sea. The third part of the question is asking you to make an argument for or against endemism. While the answer I described in class would be that seamounts do not have an endemic fauna, you could still a lot of credit for a good argument. There are more than three lines of evidence for endemism and it would be a good to mention the galatheid crab study as well.