Calcium Carbonate Compensation Depth & Calcareous Ooze Assignment NAME \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Use the Word Bank given to appropriately label the diagram below:

 Abyssal clay/siliceous ooze Seawater is saturated with CO3 Calcite-secreting organisms lysocline

 CaCO3 stable organisms die & calcareous tests sink calcareous ooze ~4,000 meters

 ~4,500 meters no accumulation of CaCO3 rapid dissolution of CaCO3 CCD

 Mid-ocean Ridge warm, sunlit surface water Draw arrows representing plate motion

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Sea level

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Diagram is not drawn to scale.

2. Define the term ‘calcium carbonate compensation depth’. What is the average depth of the CCD, in meters & in feet?

3. Describe the different conditions that cause CaCO3 to dissolve. Include the chemical reaction for the dissolution of calcium carbonate.

4. As the calcareous tests sink, does the dissolution occur gradually with depth or suddenly once the CCD is reached? Explain.

5. Define ‘calcareous ooze’. List the two main types of organisms that contribute to this biogenous sediment.

6. Calcareous oozes can be found in sediment cores drilled from locations in waters deeper than the CCD.

 Explain how this occurs with regards to plate tectonics and deposition of sediment.

7. Where can a high percentage of calcareous ooze be found in modern ocean sediments around the globe?

 Explain why this occurs.

8. If you were vacationing on a cruise ship and the captain informed you that your current position was over the Juan de Fuca Ridge at 46o N latitude, would you expect calcareous ooze to be accumulating? Why or why not?