Exam: Cyclones

Directions: Using correct markup symbols, edit these sentences for grammar and punctuation. **Do not worry about spelling, capitalization, or hyphenation.** Make the grammar and punctuation correct even if you have to guess at content in your revision.

For each emendation, **note the reason for the editing.** Some sentences or groups of sentences may contain more than one error. Some may be correct.

Hint: Work "**top down**" from sentence pattern and clauses, to phrases, to words.

- Find the subject(s) and verb(s) for each sentence, identify the clause(s), determine the sentence pattern, and punctuate appropriately. Look for subject-verb agreement and faulty predication problems.
- Then find modifying phrases and punctuate or rearrange or restructure appropriately.
- Then find **words** that need attention (perhaps to distinguish plural from possessive or to use a pronoun in the correct case).

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1. Although approximately 70% of the earths wind boundary layer lays over the oceans wind engineering has been primarily concerned with the remaining three-tenths, over the land.

2. Since the development of offshore activities such as oil and gas extraction, there is a great demand for wind engineering which studies the wind boundary layer over the oceans.

3. Another reason for interest in the wind boundary layer over the oceans is the proximity to the coast approximately 45 million people live along the coast from Brownsville, TX to Eastport, ME.

4. As coastal population increases the economic damage potential increases as well.

5. For example, $3.1 trillion worth of coastal property was insured in 2010, compared to $1.9 trillion in 2005 a 69% increase in 5 years.

6. Coastal regions around the world are at risk of severe damage and having their lives threatened from large swells and flooding produced by tropical cyclones, tropical cyclones are among the world's most serious threats to lives and property.

7. Most of the storm damages are due to storm surge, and torrential rainfall.

8. Population growth along coastal areas of the country is adding to the number of buildings and other structures that are in danger of being exposed to the hurricanes natural power, therefore, the risk of human injury and death has increased with migration to coastal regions.

9. Millions of dollars are lost each year in the United States and around the world. As a result of land-falling tropical cyclones.

10. Economic losses in the United States have been drastically rising during the last 30 years caused by hurricanes.

11. Encompassing a diameter of between 200 and 1300 kilometers and possessing a wind velocity of 33 m/s, widespread destruction is often incurred.

12. Pielke and Landsea estimates about $4.8 billion average annual cost of hurricane damage in the United States.

13. The landfalls of hurricanes in the last few decades and growing populations have illustrated the urgent need for more accurate assessment of tropical cyclone wind fields at the coast which is a function of the sea surface and the intensity of landfall.

14. Another offshore activity is in the area of wind energy, wind energy has been the worlds fastest growing energy source on a percentage basis for more than a decade.

15. Offshore wind, has emerged as a promising renewable energy resource because the strongest, most consistent winds are offshore.

16. More than 600 MW of offshore wind energy is currently installed in Europe seas.

17. However, with serious projects being proposed in the waters off the Northeast coast, the Mid-Atlantic coast and the Gulf Coast, interest in developing offshore wind energy resources in the United States is clearly growing.

18. The Cape Wind project—the first offshore wind park in the United States—will be built on Horseshoe Shoal, five miles off the Cape Cod shore in Massachusetts with 130 wind turbines, it's maximum output is 420 megawatts.

Directions: Using correct markup symbols, edit this section of a report. Use descriptive markup. Mark the paragraphs to be set in 10- point Times over 12 on a 19-point line, flush left, ragged right, with a one-em paragraph indention. Create a style sheet.

It has been convenient to divide air-sea interaction studies into two categories; small- and large-scale ocean-atmosphere interactions. The large scale dynamics of the ocean and the atmosphere are closely related. Energy is transferred from the atmosphere to the ocean surface mixed layer driving the circulation of the upper ocean. In turn, energy from the ocean is fed back to the atmosphere affecting the atmospheric circulation, the weather and the climate. The concept is deceptively simple, but as we explore the coupled earth system, we are frequently limited by our lack of understanding of the interchanges between the atmosphere and ocean. As Brown pointed out, there are two gaps in our knowledge of the air-sea interface: the theory is inadequate and the data are sparse.

The basis of the interaction of the atmosphere and the ocean is the exchange of momentum and energy across a material interface---the sea surface. An exchange that, for the most part, occurs on molecular scales, involving both turbulent and laminar processes modified by wave breaking, surface tension, the structure of the wind boundary layer and the ocean mixed layer and other effects. The ocean mixed layer is the oceanic surface zone that responds the most quickly and directly to atmospheric fluxes, and it is through the mixed-layer that such influence is transmitted to the whole ocean in the long term. A satisfactory understanding of these processes remains elusive, but is essential if we are to address adequately the larger scale ocean atmosphere problems.

The small scale exchange processes are generally related to the global scale problems via parameterizations of the fluxes that use readily obtained mean quantities measured from various platforms such as buoys, ships and satellites. These parameterizations are also used extensively in operational meteorological models and many research general circulation models of the coupled

ocean-atmosphere system. Large uncertainties exist in the derivations of the bulk parameterizations due to the difficulty of measuring surface fluxes directly, and the difficulty of applying these measurements to scales greater than a few hundred kilometers and several hours.

Style Sheet