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87.202 - PRINCIPLES OF EARTH & ENVIRONMENTAL SYSTEMS II
STUDY QUESTIONS AND PROBLEMS XIII

1. Draw a tidal curve for each of the following. Label the significant parts of the tidal curve.

a. Diurnal tide

b. Semi-diurnal tide

c. Mixed tide

2. Describe the equilibrium theory of tidal generation. What are the major assumptions? What features of the tide does the theory fail to predict?

3. Explain the dynamical theory of tidal generation. How does it differ from the equilibrium theory of tidal generation?

4. Draw a diagram showing the relationship between the sun and moon during spring and neap tides.

5. Explain why the tide acts like a forced shallow-water wave in the deep ocean.

6. A wind blowing along the axis of a lake 60 km long gives the water a surface slope. If the wind suddenly ceases, an oscillatory seiche results. Calculate the period of the fundamental oscillation if the lake is 45 m deep. (ans: 5714 s = 1.58 h)