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**RAJARATA UNIVERSITY OF SRI LANKA**
**FACULTY OF APPLIED SCIENCES**

**B. Sc. (General) Degree in Applied Sciences**
**Third Year - Semester I Examination – October / November 2015**

**PHY 3203 – PHYSICAL OCEANOGRAPHY**

**Answer all questions** **Time: 2 hours**

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1. (a) What is "Principle of Constant Proportions"? [05 marks]

(b) What is the "salinity of seawater"? Explain how you determine the salinity of seawater using the "chlorinity of seawater" [10 marks]

(c) What is acid-base balance in seawater? Explain how it prevents broad swings of pH in seawater? [10 marks]

2. (a) By way of a clear diagram show how the earth's wind energy (Trade winds and Westerlies) is concentrated in each hemisphere. [05 marks]

(b) What are "surface currents" and why the direction of water movement in surface currents is different from that of the wind? [05 marks]

(c) What would be the net flow of water (Ekman transport) in the Northern hemisphere and in the Southern hemisphere? [10 marks]

(d) Describe the processes of coastal upwelling and downwelling. [05 marks]

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3. (a) Discuss the topographical features of the ocean. [10 marks]

(b) *"There is no way to represent oceanographic sections preserving the aspect ratio"*. Briefly explain the above statement. [05 marks]

(c) What is "sea floor spreading" and what evidence do we have to prove its occurrence? [10 marks]

4. Write short notes on the following.

(i) Salt wedge estuary [6 marks]

(ii) Tide generating forces [6 marks]

(iii) Halocline [6 marks]

(iv) Oceanic mass budget [7 marks]

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