



UNIVERSITY OF RUHUNA
FACULTY OF FISHERIES AND MARINE SCIENCES &
TECHNOLOGY

Academic Year 2023/2024

Bachelor of Science Honours in Fisheries and Marine Sciences Degree/ Bachelor of
Science Honours in Marine and Freshwater Sciences Degree

Level II Semester II Examinations – April / May 2025

OCG 2243: Physical Oceanography

Time: Two Hours

Section II

Answer only Three (03) questions.

01 Hour 30 minutes/ 75 Marks

1.
 - a. Compare the **three (03)** different phases of ENSO. (15 Marks)
 - b. “The ENSO influences the sea surface temperature and rainfall anomalies”.
Defend this statement using appropriate examples. (10 Marks)
2. Write short notes on the following.
 - a. Potential temperature of ocean water. (09 Marks)
 - b. Surface mixed layer of the ocean. (08 Marks)
 - c. Geostrophic balance. (08 Marks)
3. Write short notes on any **three (03)** of the following. Use labelled diagrams where appropriate.
 - a. Sea breeze and land breeze
 - b. Extra tropical and tropical cyclones.
 - c. Factors causing day / night and seasonal variation
 - d. Conservation of vorticity in constant and varying depth conditions(25 Marks)
4.
 - a. What are the forces that generate tides? Using schematic diagrams, describe how these forces generate tides. (08 Marks)
 - b. Briefly explain three main types of tidal patterns. (09 Marks)
 - c. Using labeled diagrams briefly explain the factors that complicate the formation and behaviour of tides. (08 Marks)

5.

- a. What are the six (06) major current systems in the world oceans? (05 Marks)
- b. Briefly explain the western boundary currents, eastern boundary currents and transverse currents. (15 Marks)
- c. Describe the westward intensification. (05 Marks)

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