



UNIVERSITY OF RUHUNA

FACULTY OF FISHERIES AND MARINE SCIENCES & TECHNOLOGY

Academic Year 2022/2023

Bachelor of Science Honours in Marine and Freshwater Sciences Degree

Level III Semester II Examination – October/November 2024

OCG 3232 – Coastal Processes and Morphology

Time: 02 hours

Answer all questions

[04 marks]

[06 marks]

[10 marks]

*4 = 20 marks]

1.
 - i. Explain the role of breaking waves in the generation of coastal currents. [30 marks]
 - ii. Define wave refraction and explain its role in coastal erosion and sediment transport. [30 marks]
 - iii. Briefly explain the processes that contribute to sediment movement along coastlines. [40 marks]
2.
 - i. What is the significance of the swash and backwash processes in beach sediment transport? [40 marks]
 - ii. What is a beach profile? List the typical zones in a beach profile and explain the characteristics of each zone. [40 marks]
 - iii. Identify three main sources of sediment for coastal environments. Which is typically the largest source? [20 marks]
3.
 - i. Describe the different types of coastal landforms that are created by sediment deposition. [50 marks]
 - ii. How does the energy of the coastal environment influence the type and size of those landforms? [20 marks]
 - iii. Describe the process of dune formation and explain the role of vegetation in stabilizing coastal dunes. How does human interference in dune areas affect coastal resilience? [30 marks]
4.
 - i. A beach nourishment project has been proposed to mitigate erosion along a coastal stretch. Describe the potential pros and cons of this approach. How would you evaluate the project's success over time? [40 marks]
 - ii. Analyse the impact of constructing a breakwater on coastal sediment transport and morphology. [30 marks]
 - iii. How does human activity impact sediment dynamics along coastlines? Provide one example of human intervention that has altered sediment transport. [30 marks]

@@@@@@@@@@@@@@