

2025

**M.Sc. 1st Semester Examination
OCEAN GEOMATICS WITH AI**

Paper : OGAC403X0

(Introduction to Operational Oceanography)

Full Marks : 25

Time : One Hour

*The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.*

Group - A

Answer any *two* questions : $2 \times 2 = 4$

1. Name any two major forces which drive the ocean currents?
2. What is the expression for Coriolis parameter (f)?
3. What are the terms in the geostrophic balance equation?
4. Write down the hydrostatic equation in the context of ocean circulation.

P.T.O.

(2)

Group - B

Answer any *two* questions : $4 \times 2 = 8$

5. Draw a typical vertical structure of temperature (up to 3000m depth) in the central Bay of Bengal. Mark (a) isothermal layer (b) thermocline.
6. Define isothermal layer, mixed layer and barrier layer in the ocean.
7. Write a short note regarding physical mechanism of thermohaline circulation.
8. Explain the flow characteristics and forcing mechanisms of major current systems in the northern Indian Ocean.

Group - C

Answer any *one* question : $8 \times 1 = 8$

9. Describe the significance of warm ocean currents to maintain the global ocean temperature structure.
10. Briefly explain the necessary conditions to form the frequent tropical cyclone over the Bay of Bengal.

Internal Assessment : 5 marks
