

UNIVERSITY OF RUHUNA  
BACHELOR OF SCIENCE IN FISHERIES AND MARINE SCIENCES DEGREE

Level IV Semester I Examination

July 2015

OCG 4141 - Navigation and International Signals

Time: 01 hour

Answer all questions

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1. Briefly define (03 Marks each)
  - a. Latitude of a place
  - b. Longitude of a place
  - c. Great circle
  
2. Briefly describe (04 Marks each)
  - a. Types of compasses used for marine navigation
  - b. Variation and Deviation
  - c. A Position line and the Fix
  
3.
  - a. What are the three commonly used nautical chart projections? (03 Marks)
  - b. Write down 5 methods of obtaining a position line (05 Marks)
  - c. Explain the factors considered when you select a place to anchor a boat (07 Marks)
  
4. Explain the following terms defined under UNCLOS; (04 Marks each)
  - a. Innocent passage
  - b. Internal waters
  - c. Territorial waters
  - d. Contiguous Zone
  
5.
  - a. Explain how to determine the cable length when anchoring a boat (03 Marks)
  - b. Describe the safety swinging circle (06 Marks)
  - c. What are main types of navigation lights and their respective Arcs? (05 Marks)
  
6. When you are on board a ship at sea, an unknown ship is observed at  $072^{\circ}$  (compass bearing) (07 Marks each)
  - a. Calculate magnetic bearing if deviations  $2^{\circ}$  W
  - b. Calculate the variation if true bearing is  $68^{\circ}$
  
7. If you observe a fishing boat at Red  $70$  (Relative bearing) when your course is  $020^{\circ}$ , what is the true bearing of the fishing boat? (06 Marks)
  
8. In an observation, magnetic bearing was  $217^{\circ}$ . If variation is  $3^{\circ}$ E and Deviation is  $01^{\circ}$ W; (07 Marks each)
  - a. Calculate the true bearing
  - b. Calculate the compass bearing