

# INDIAN MARITIME UNIVERSITY

(A Central University, Government of India)

End Semester Examination Dec 2019/Jan 2020

**B.Sc. (Nautical Science)**

**Semester -II**

**UG21T4206- CHARTWORK & COLLISION PREVENTION**

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Date: 13-01-2020

Max Marks: 70

Time: 3 Hrs

Pass Marks: 35

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**Note:- Question no 1 is compulsory.**

Attempt any 5 questions from the remaining 6.

Use of Chart No.813. Scientific calculator is permitted.

Institute to provide: Luminous Range diagram and Chart 813.

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1. a) Draw Symbols (5X4=20 Marks)
    - i. Pilot Boarding area
    - ii. Ocean current rate 2 knots during June-July
    - iii. Wreck dangerous to surface navigation
    - iv. Submarine power cable.
  - b) Define
    - i) Ocean chart
    - ii) Plan chart.
  - c) What are the uses of following:
    - i) Leading lights
    - ii) Horizontal Sector Lights for Light Houses.
  - d) Define following:
    - i) Restricted visibility
    - ii) Vessel engaged in fishing
  - e) Define following:
    - i) Sidelights
    - ii) Towing light
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2. a) If you have two charts of the same area of different scales, chart of which scale will you use and why?
  - b) What are routeing charts? How many routeing charts are published by British Admiralty? (2X5 = 10 Marks)
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3. a) At 1700 hrs Great Basses Lt light bore  $354^\circ$  T distance 8.5 miles. Find the position.
  - b) A ship's position was found to be in Lat  $06^\circ 15'N$  Long  $081^\circ 55'E$  What will be the bearing and distance of Little Basses Lt. from the ship? (2X5 = 10 Marks)
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4. At 1900 hrs, while steering a course of  $075^\circ$  T at 14 knots, Dondra head light bore  $285^\circ$  T distance 9'. Find the position of the ship. While on the same course and

speed she experienced a current setting in the direction  $135^{\circ}$  T at 3 knots and Northerly wind causing a leeway of  $3^{\circ}$ . Find the Course and speed made good.

(10 Marks)

5. At 0900 hrs, Colombo light bore  $085^{\circ}$  T distance 9'. Find the position of the ship. From this position find course to steer to pass Beruwala Point light 8' off to port counteracting a current setting in the direction  $115^{\circ}$  T at 3 knots and easterly wind causing a leeway of  $3^{\circ}$ . Find the time when Beruwala Point Lt. will be abeam if the ship's speed was 14 knots.

(10 Marks)

6. a) Explain Rule 5 of IRPCS in your own word. (2x5=10 Marks)  
b) State the annexes in IRPCS

7. a) Describe the lights and shapes exhibited by vessel engaged in trawling.  
b) Describe the lights and shapes exhibited by vessel not under command.  
c) Describe the lights and shapes exhibited by vessel constrained by her draught.  
d) Describe the lights and shapes exhibited by power-driven vessel when towing.  
e) What light or sound signal any vessel may make to attract attention of another vessel as stated in Rule 36 of IRPCS. (5x2=10 Marks)

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