

**INDIAN MARITIME UNIVERSITY**  
(A Central University, Government of India)  
END SEMESTER EXAMINATIONS – DECEMBER 2019  
**B.Sc (Nautical Science)**  
Semester: II

**UG21T3206- Chartwork & Collision Prevention Regulations**

Date: 13-01-2020

Max Marks: 70

Time: 3 Hours

Pass Marks: 35

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

Attempt any 5 questions from the remaining 6

Use of Chart No.5049 or equivalent. Scientific calculator is permitted.

Institute to provide: Luminous Range diagram and Chart.

Q1.a) Draw Symbols

(5X4=20 Marks)

- i. Submarine pipeline
- ii. Flood tide stream 2 knots
- iii. Wreck not dangerous to surface navigation
- iv. No bottom found at 120mts.

b) Define i) Plan chart ii) Coastal chart.

c) What are the uses of following:

- i) Compass rose
- ii) Luminous range diagram

d) Define following: i) Vessel engaged in fishing  
ii) Vessel not under command

e) Define following: i) Masthead Light ii) Stern light

Q2.a) List 5 cautions that you will observe when using chart for position fixing.

b) Explain Mercator and Gnomonic chart?

(2X5=10 Marks)

Q3.a) At 1700 hrs Start Point Lt. light bore  $344^\circ$  T distance 10.5 miles. Find the position.

b) A ship's position was found to be in Lat  $50^\circ 26' N$  Long  $001^\circ 13' W$ . What will be the bearing and distance of St. Catherine Point Lt. from the ship?

(2X5=10 Marks)

Q4. At 1900 hrs, from a ship following compass bearings were observed: -

Needles Lt. Ho.  $329^\circ C$   
St. Catherine Point Lt. Ho.  $001^\circ C$   
Nab Tower  $041^\circ C$

Find the position of the ship and the deviation for the ship's head if variation was  $2^\circ$  West.

(10Marks)

Q5. a) At 0900 hrs, C.de Le Have Lt. bore  $144^\circ$  T and c.d'Antifer Lt. bore  $104^\circ$  T. Find the position of the ship. From this position find course to pass Bassurelle Lt Vsl 3.6' off when abeam on portside.

b) Find the course and speed made good , if current was setting  $180^{\circ}$  T at 2.5 knots  
a strong wind was experienced from NW causing a leeway of  $5^{\circ}$ .  
Ship's engine speed 15 knots (2X5=10 Marks)

Q6. a) Explain Rule 2 of IRPCS in your own word. (2X5=10Marks)  
b) Explain Rule 19

Q7. a) Describe the lights and shapes exhibited by power-driven vessel.  
b) Describe the lights and shapes exhibited by vessel not under command.  
c) Describe the lights and shapes exhibited by vessel engaged in pilotage duty.  
d) Describe the lights and shapes exhibited by a vessel at anchor. (4X2.5=10Marks)

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