

Candidate's Name:

Ports and Maritime Organization
Seafarers' Examination and Certification Directorate
Exams Code: CMCN – 934

Subject: Terrestrial and Coastal Navigation & Nav Aid

Date: 1393 .06.24

Rank : Chief Mate (GT \geq 3000)

Time allowed: 2.5 Hrs

*Use deviation card No.1, tide table 2000, chart No: 2887, Nories table, and **variation** as per chart.
Positions in the brackets are only for guidance and should not be used as actual position of symbols.*

----- **(Pass marks : 70)**

Q.1) - A vessel uncertain of the deviation, observes Jazireh-ye-Hendorabi Lighthouse ($26^{\circ} 40.5'N$, $053^{\circ} 38.5' E$), $280^{\circ} C$ and Chiru Lighthouse ($26^{\circ} 42' N$, $053^{\circ} 43.5' E$), to bear $330^{\circ} C$.

At the same time the **latitude** by meridian altitude is found to be **$26^{\circ} 39' N$** .

Find the ship's position.

(20M)

Q.2) - With the ship's head $258^{\circ} C$ and vessel steaming 15 knots, "Jazireh-ye-Forur" ($26^{\circ} 17.5' N$, $054^{\circ} 30' E$) Lighthouse bore $239^{\circ} C$ by compass and one hour later it was $105^{\circ} C$.

Making due allowance for the effect of the tidal stream estimated to set $000^{\circ} T$ at 2.5 knots,

Find the **position** of the vessel when first and second bearing was taken.

(25M)

Q.3) - A lighthouse off **Tilbury** (England) has charted height of 15 m. Find its height above water level at 11:30 GMT on 1st September for use with a vertical sextant angle?

(20M)

Q.4) - a) - Find the **Great Circle** distance, and the initial course between the following positions;

A : 41 40 S 175 25 E

B : 07 00 N 080 50 W

(15M)

b) - What is the saving distance while following the GC track over the Rhumb line track?

(10M)

Q.5) - State how a mariner must assess and judge the reliability of a chart?

(10M)