INDIAN MARITIME UNIVERSITY

(A Central University Government of India)

May-June 2018 End Semester Examinations

Diploma in Nautical Science (DNS)

Semester: I

NAVIGATION – I: TERRESTRIAL & CELESTIAL(UD11T1104)

Time: 3 hours | Max Marks:70

Date:07-06-2018 | Pass Marks: 35

Note: All Questions are compulsory.
Use BA Chart 813 (South Coast of Sri Lanka) for Chart work.
Use of Selected pages of Nautical Almanac 1992, Norie's Tables and Non-programmable type scientific calculator is allowed in Exam Hall. Draw Sketches wherever required.

SECTION A

1. Define the following: (2x5=10 marks)

   a) Longitude

   b) Departure

   c) LHA

   d) Nautical Mile

   e) Nadir

2. Fill in the blanks: (5 marks)

   a. The reference used to measure latitude is _____

   b. One tenth of a mile is called as _____.

   c. The maximum departure t between two points will be its _____

   d. The speed of wind & tide is measured in _____(units)

   e. The meridian passing through Greenwich is known as _____.

3. Write short note on 'Difference in Meridional Parts' (5 marks)

4. A ship sailed from A 44°44'S 154° 30'E to B 44°44'S 179°50'E. Find the course and distance steamed. (5marks)

5. The sextant altitude of SUN's UL on 29th Nov 1992 was 20° 14.8'. Find its True Zenith Distance at this time considering HE = 25m and I.E. 2.2' on the arc. (5 marks)

6. On 2nd Sept. 1992, in DR position 40° 28'N 064° 20'E, the rising sun bore 090°(C). If variation was 5°W, find the deviation of the compass. (5 marks)

SECTION B

7. a) Define the following: (2x3=6 marks)

   i. Deviation

   ii. Set & Drift

   iii. Plan Charts

   b) Identify the following charts symbols & abbreviations: (1x4= 4 marks)

   i. *PD*

   ii. MHWS

   iii. 

   iv. 

8. Fill in the blanks: (10 marks)

True course	Variation	Magnetic course	Deviation	Compass course	Error
167°		174°	6°E		
	5°E		5°W	343°	
	7°W	280°	2°W		

9. At 0500 hrs, a ship on the course of 030° (C) observed 'Great Basses Reef'[Fl.15s34m25M] bore 265° (C) & 'Little Basses Reef' [VQ(2)10s34m27M] bore 005°(C) at the same time.

(a) Find the ship's position at 0500 hrs. (Variation 3°W);

Extract of Deviation card of the ship:

Ships Heading by Compass	Deviation
10°	4° W
20°	3° W
30°	2° W
40°	1° W

(b) The Vessel continued the course of 030°(C) at the speed of 15kts. Find the bearing & distance off when 'Sangma Kanda Point' [Fl5s10M] will be abeam on the Port Side. (Variation 3°W)

(c) Find the time when 'Sangma Kanda Point' [Fl5s10M] will be abeam.

(15 marks)

End