

**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)**

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Time: 3 hours

Max Marks:70

Date:07-06-2018

Pass Marks: 35

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**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.**

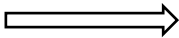
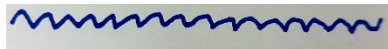
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**SECTION A**

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  $44^{\circ}44'S$   $154^{\circ} 30'E$  to B  $44^{\circ}44'S$   $179^{\circ}50'E$ . Find the course and distance steamed. (5marks)
5. The sextant altitude of SUN's UL on 29<sup>th</sup> Nov 1992 was  $20^{\circ} 14.8'$ . Find its True Zenith Distance at this time considering HE = 25m and I.E. 2.2' on the arc. (5 marks)
6. On 2<sup>nd</sup> Sept. 1992, in DR position  $40^{\circ} 28'N$   $064^{\circ} 20'E$ , the rising sun bore  $090^{\circ}(C)$ . If variation was  $5^{\circ}W$ , find the deviation of the compass. (5 marks)

### SECTION B

7. a) Define the following: (2x3=6 marks)
- Deviation
  - Set & Drift
  - Plan Charts
- b) Identify the following charts symbols & abbreviations: (1x4= 4 marks)
- PD*
  - MHWS
  - 
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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\*\*\*