INDIAN MARITIME UNIVERSITY

(A Central University, Government of India)

End Semester Examination Dec 2019

DIPLOMA IN NAUTICAL SCIENCE (DNS)

Semester : II

NAVIGATION III (UD11T1201)

Date: 09-12-2019	Max Marks: 70
Time: 3 Hrs	Pass Marks: 35

Note:-Use of Non-programmable Scientific calculator, Norie's Table and Nautical Almanac are permitted. Tidal graph and relevant chart to be provided by the Exam Centre. Use BA Chart 2675 of INT 5049

Part A

(Attempt any 4 questions from this section. Each carry 10 marks)

1. On 14th Sept 1992, in DR 07° 40' S 116° 27' W, the sextant altitude of the Sun's UL on the meridian was 79° 39'. If the IE was 3.2' off the arc and HE was 12 mtrs, find the latitude and the direction of the PL. (10 marks)

2. On 22nd Sept 1992, PM, in DR long 161° 27' W, the sextant altitude of the Pole star was 36°32.5' at GMT 23d 05h 21m 08s. If the IE was 3.2' off the arc & HE was 12mtrs, find the direction of position line and the Latitude. (10 marks)

3. On 5th March 1992, AM, in DR 38° 11' S 151° 10'E, the sextant altitude of the Sun's LL was 35° 59.1' when GMT was 04d 22h 55m 40s. If the IE was 1.3' off the arc and HE was 30 mtrs, find the intercept and direction of the PL.(10 marks)

4. Explain to differentiate with suitable diagram. (2x5=10 marks)
   a) Equinoxes and Solstices
   b) Perihelion and Aphelion

5. a) Explain Lunar Eclipse with a suitable diagram. (2x5=10 marks)
   b) Explain use of International Date Line.

Part B

(Attempt any 3 questions from this section. Each carry 10 marks)

6. a) Explain Appraisal Stage of passage planning. (2x5=10 marks)

   b) Draw and explain following IALA bouys:-
   East Cardinal buoy and Safe Water Marking buoy.

7. What are the advantages of ECDIS to a navigator? (10 marks)

8. Find the height of tide 0830 hrs (S. T.) on 17th Sept. at Vancouver.
The extract from the A.T.T are given below:- (10 marks)

Extract from the A.T.T		
TIME ZONE +0800		
17th Sept.	0024	1.9 m
	0534	6.5 m
	1232	0.5 m
	1924	6.9 m

9. On 12th June, at 1900 hrs, a ship steering 099°T at 12 knots, Pte. de Barfleur Lt. bore 150°T and at 2000 hrs the same light bore 215°T. She experienced a current setting 042°T at 3 knots and Northerly wind causing a leeway of 3° during the above time. Find the Ships position at 1900 hrs and 2000 hrs.

(10 marks)

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