INDIAN MARITIME UNIVERSITY

(A Central University, Government of India)

December 2016 End Semester Examinations

B.Sc. (Nautical Science)- First Semester (2016-17 batch onwards)

Terrestrial Navigation (UG21T3106)

Date : 26.12.2016 **Maximum Marks: 70**

Time: 3 Hrs **Pass Marks : 35**

Note: Answer any Seven Questions. All questions carry equal marks.
Nories Table & Non-programmable scientific calculator is permitted.

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1) Define the following (10 marks)

a) D'lat, b) nautical mile c) prime meridian d)great circle. (e) D'Long

2) complete the following table (10 marks)

True co urse	Variation	Magnetic course	deviation	Compass course	error
095°	5°E		3°W		
	13° W	164°	4° W		
273°		286°		288°	
	7° W		6° E	168°	
343°		347°	5°W		

3) a) In what latitude will the number of miles of departure equal to half the number of minutes of d'long (5 marks)

b) what are the advantages and disadvantages of a Mercator chart? (5 marks)

4) By plane sailing, find the position arrived if vessel departed from 03° 40.3' S, 175° 40.1' W, course followed 301° (T) and distance travelled 589 miles. (10 marks)

5) On 6th march a ship in position 46°36' S 175° 34' E steamed as follows: (10 marks)

TIME	Compass Course	Deviation	Leeway	WIND	SPEED(KTS)
1200	150°	5°E	3°	SW X W	8
1600	140°	4°E	5°	SW	8
2000	120°	3°E	NIL	SW	7.5
2400	120°	3°E	NIL	SW	6.5
0400	100°	1°E	NIL	S	8
0800	095°	NIL	NIL	S	8
1200	095°	NIL	NIL	S	8

Var 10^0 E throughout. Find the DR position at NOON on 7^{TH} March.

6) Find the Great circle distance and initial course from position A: 06°00' N 079° 00' W to Position B: 38°00 'S 179° 00' E. (10 marks)

7) Find the initial course, final course and the distance along the composite track from Position A : 51^0 20 'N 010^0 00'E to Position B: $52^0$00 'N 055^0 00' E having a ceiling latitude of 53^0 N. (10 marks)

8) What is the use of knowledge of vertex for planning a Great Circle course. (10 marks)

9) Find the course and distance by Mercator sailing from

Position P --- LAT $15^0$32 'N ,LONG $024^0$06' W to

Position Q---- LAT $45^0$56 'N LONG 064^0 38' W (10 marks)

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