INDIAN MARITIME UNIVERSITY

(A Central University Government of India)

END SEMESTER EXAMINATIONS-June/July 2019

B.Sc Nautical Science

Semester-I

Terrestrial Navigation

(UG21T4106)

Date: 20-07-2019 **Maximum Marks: 70**

Duration: 3 hrs. **Pass Marks: 35**

Note: Question No. 1 is compulsory.

Answer any 6 questions from remaining 8 questions(each of 10 Marks). Use of Nories Nautical Table,Nautical Almanac and Non Programmable Scientific Calculator is permitted. Outline of World Map to be Provided by the examination centre.

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1. Define : (a) Dead Reckoning (b) Deviation (c) Natural scale
(d) Meridional parts (e) Strait

(5 x 2 = 10 marks)

2. A ship set sail from position lat.10 º 13'N long.033 º 13' E along a great circle track & arrived at lat.62 º 48'N long.113 º43' E. Find the initial course, the final course and the great circle distance covered. Draw the diagram. (10 marks)

3. On 04 May 2008 at 1200h a ship in DR lat.17 º 10'S long.018 º 09' E set course and carried out various alteration of course as under:-

	Date	Time	Co(C)	Deviation	Variation	Leeway	Wind	Log
	04 May	1200	252º	3ºE	5ºW	3º	N	0
a/c	04 May	2100	042º	4ºE	2ºE	2º	NW	88
a/c	05 May	0500	314º	5ºE	4ºE	1º	SW	180
	05 May	1200						250

Find the position at noon on 05 May 2008. The current was 133º(T) at 3 knots throughout.

a/c means ' Alter course'. Co(C) means Compass course. (10 Marks)

4. (a) Define :-

(i) Geographical mile
(ii) Meridian
(iii) Parallel of Latitude

(3x2=6 Marks)

(b) Write short note on nautical mile explaining why does it change at different latitudes. (4 Marks)

5. (a) Define (i) Variation (ii) Isogonic lines (2x2=4 Marks)

(b) (i)Find the true course if the compass course is 114º(C) & variation is 3º W. (3 Marks)

(ii)Find the compass course if the true course is 104º(T) & variation is 3 º E. Use the following deviation table for both the parts.

Ship's head (C)	100 º(C)	110 º(C)	120 º(C)	130 º(C)
Deviation	7 º W	3 º W	1 º E	4 º E

(3 Marks)

6. (a) A ship in position lat.20º 45' N long.178º 20' E, steered along the parallel of latitude eastward & covered 300'. What was her final position? (5 Marks)

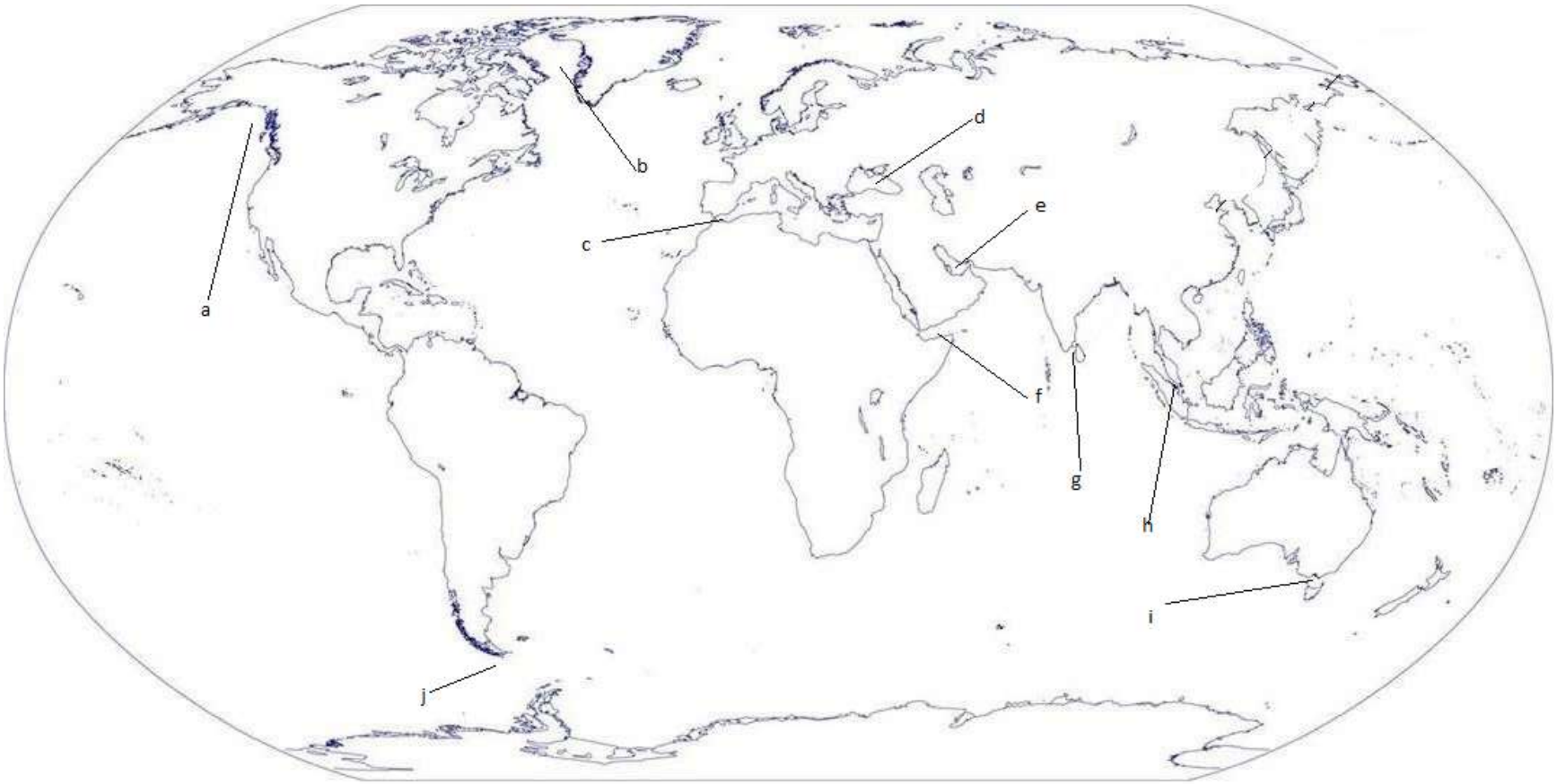
(b) A ship departed the position lat.23º 05' S long.148º 40' W along a rhumb line & arrived at position lat.20º 45' S long.150º 10' W. Find the course steered and distance run. (5 Marks)

7. (a) A ship departed the position lat.10º15' S long.153 º 45'W along a rhumb line & arrived at position lat.12º15' N long.153º45'E. Find the course & distance covered. (5 Marks)

(b) A ship in position lat.34º15' N long.164 º 42' W steered a rhumb line course 223º and covered 2000'. Find her final position.(5 Marks)

8. On the world map given in the last page, 10 lines are shown. One end of each line is indicated by letter (a,b,c….to j) and the other end represents either of : Sea, Strait, Canal, Gulf, Bay, Channel, Port, Cape etc. Write in the answer book, which these letters are representing on the map. (10x1=10 marks)

9. A ship planned to sail from position lat.15 º 15'N long.020 º 12' E along a great circle track to position lat.57 º 43'N long.178 º51 E'. It was observed that the limiting latitude was 60 º N. Plan to sail along a composite track & find the total distance to be covered. Draw the diagram. (10 marks)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