192. Specimen Set of Examination-papers for Master (F.G.) :—

1. Navigation and Nautical Astronomy.

Time allowed 3 hours.

Draw suitable figures and give the necessary description for each problem.

1. Day's work : 7th May, 1925, at 6 p.m. Muckle Flugga Lt.-Ho., in lat. 60° 51′·3 N. and long. 0° 53′ W., bore four points before the starboard beam, and at 7 p.m. was abeam; deviation and variation as per log :—

Hours	Compass Courses	Miles	10ths	Winds	Lee-way	Devn	Remarks &c
1	N54°E	11	5	SSE	0	1°E	
2	,,	10	,,	,,	,,	,,	
3	,,	10	,,	,,	,,	,,	
4	,,	10	,,	,,	,,	,,	
5	N76°E	7	—	North	8°	4°W	
6	,,	7	—	,,	,,	,,	
7	,,	7	—	,,	,,	,,	Varn 18°W
8	,,	7	—	,,	,,	,,	
9	,,	8	—	,,	,,	,,	
10	,,	8	—	,,	,,	,,	
11	,,	8	5	,,	,,	,,	
12	,,	8	,,	,,	,,	,,	
1	S87°E	12	—	South	0	7°W	
2	,,	12	—	,,	,,	,,	
3	,,	12	5	,,	,,	,,	
4	,,	12	,,	,,	,,	,,	
5	,,	12	—	S by W	,,	,,	Allow for a current
6	,,	12	—	,,	,,	,,	setting S15°W mag-
7	,,	11	4	,,	,,	,,	netic 18 m. during
8	,,	11	6	,,	,,	,,	this 24 hours
9	,,	11	4	,,	,,	,,	
10	,,	11	6	,,	,,	,,	
11	,,	11	—	,,	,,	,,	
12	,,	11	—	,,	,,	,,	

Find the course and distance made good from the previous noon, and the latitude and longitude in at noon of the 8th May.

2. On 29th April, 1925, in lat. 49° 20′ N., long. 130° 00′ W., time by a chronometer 17 h. 49 m. 36 s., which was 11 m. 36 s. fast of mean time at Greenwich, the sun bore by compass east.

Required—The true azimuth, and error of the compass, by the Time Azimuth Tables; and, supposing the variation to be 25° 30′ E., required the deviation of the compass for the direction of the ship's head.

3. On 2nd November, 1925, in lat. by account 18° 36′ N., long. by account 64° 45′ E., the observed altitude of the star α Arietis (Hamel), east of the meridian, was 36° 16′, time by a chronometer 14 h. 53 m. 06 s., which was fast for mean noon at Greenwich, 18th September, 1925, 3 m. 47 s., and losing 1·8 s. daily, height of eye 26 ft., index error of sextant 3′ 00″ to add.

Required—The longitude by chronometer.

4. On 5th June, 1925, in lat. by account 51° 28′ S., long. 79° 16′ W., the observed altitude of sun's L.L., near the meridian, was 15° 08′, north of the observer, height of eye 40 ft., time by a watch 18 h. 09 m. 47 s., which had been found to be fast of apparent time at ship 5 h. 23 m. 30 s., but the ship had made 19′ difference of longitude to the westward since the determination of the error on apparent time at ship.

Required—The latitude of the ship at the time of taking the observation; also required the latitude at noon, the ship having run 016°, 11 m., between noon and the time of taking the observation.

2. Nautical Astronomy and Trigonometry.

Time allowed 2 hours.

Draw suitable figures and give the necessary description for each problem.

1. On 8th June, 1925, in long. 57° 45′ E., the observed meridian altitude of the moon's L.L. was 70° 40′, south of the observer, index error 3′ 20″ to add, height of eye 28 ft.

Required—The latitude.