

**INDIAN MARITIME UNIVERSITY**  
**(A Central University, Government of India)**

**June 2016 End Semester Examinations**  
**B.Sc. (Nautical Science) - 2013 batch onwards**  
**Semester III**  
**Navigation – III**  
**(UG21T2306)**

**Date : 11.07.2016/F.N**

**Time: 3 Hrs**

**Maximum Marks: 70**

**Pass Marks : 35**

**NOTE:** Attempt any SEVEN questions. All questions carry equal marks **7x10=70**

Use of Non-programmable scientific calculator is allowed. Use of Norrie's Table and Nautical Almanac is permitted.

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1. Define following with suitable diagram
  - i) Declination
  - ii) Right Ascension (RA)
  - iii) Local Hour Angle (LHA)
  - iv) Obliquity of the Ecliptic
  - v) Celestial Meridian
2. a) Explain 'Standard Time' and 'Zone Time'.  
  
b) On 29<sup>th</sup> Nov 2008 in DR 34°34'N; 130° 27'W at GMT time 29d 17h 47m 49s, find the LHA of Sun.
3. On 2<sup>nd</sup> May 2008, in DR 179° 57'W, the sextant altitude of Sun's UL on the meridian was 59° 14' South of the observer. If I.E was 1.8' on the arc and HE 12 m, find the Latitude and the LOP.
4. a) Define following:- i) Sensible horizon ii) Horizontal parallax iii) Elevated pole  
  
b) Find the true altitude of the Sun at visible sunrise on 29<sup>th</sup> Nov 2008. HE 14 m.
5. On 14<sup>th</sup> September 2008, the sextant altitude of the Sun's UL was 70°29.8'. If IE was 3.2' off the arc and HE was 14m, find the true altitude and true zenith distance.
6. On 1<sup>st</sup> December 2008, in DR 06°35'N 64°18'W, an observation of the Sun's LL on the meridian was made and the sextant altitude was found to be 61°27.5'. If HE was 14m, and IE was 2.4' on the arc, required the latitude and the direction of the LOP.
7. a) What are the advantages of Passage Planning?  
b) List 7 Books/Publications required for planning passage.

8. What are the various segments of passage from berth of port A to berth of port B. Elaborate it.
9. a) Explain following with reference to passage planning:- i) No go area      ii) Testing of controls and engine
- b) Explain the tasks to be performed during the planning stage by the navigating officer.