

B.Sc. (NAUTICAL SCIENCE)

Term-End Examination

June, 2013

BNA-021 : NAVIGATION III (NAVIGATION AND CHART WORK)

Time : 3 hours

Maximum Marks : 70

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- Note :*
- 1. All Questions are compulsory.*
 - 2. Use of non programmable scientific calculator is permitted.*
 - 3. Use B.A chart 2b75 (English channel)*
 - 4. Tidal curve diagram/ graph to be provided by examination centre.*
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SECTION - I

1. Explain the following :
 - (a) SHA of sun 3
 - (b) Daily retardation of moon 3
 - (c) Lunar Eclipse 4

2. Describe how the (clocks) on the ship will be adjusted on her voyage from Tokyo to San Francisco. 5

3. On 15th June 92 am at ship in DR $19^{\circ}05'N$ $089^{\circ}41'E$ the observed altitude of sun's LL was $21^{\circ}40.2'$ at GMT 01h 06m 26 sec. Calculate the longitude when the PL cuts the DR latitude and state the direction of PL. Given HE 25m. 10
4. On 23rd August 1992, Sun rose bearing 080° (G) for an observer in DR $20^{\circ}05'N$ $091^{\circ}05'E$. Find the Gyro Error. 10

SECTION-II

5. A vessel was steering $270^\circ(c)$, at 1000hrs. Lizard pt. Lt. bore $314^\circ(c)$ and at 1040 hrs. it bore $359^\circ(c)$. During this period current was setting $042^\circ (T) \times 2kts$. Find the course made good and vessel's position at 1040 hrs. Ship's engine speed 12kts, variation $6^\circ W$. Dev. $7^\circ E$. 10
6. On board a ship at 1000 hrs. The following Compass bearing were observed : 5
 Needles point Lt. ho. 319°
 St. Catherine Point Lt. ho. $359^\circ(c)$
 Nab Tower Lt. ho. $050^\circ (c)$
 Find ship's position and deviation if variation was $6^\circ W$
7. Find the height of tide at Bhavnagar at 1430 hrs. On 7th February. The extract from the tide tables is given below : 10
- | EXTRACT FROM A.T.T | | |
|--------------------|------|--------|
| | TIME | HEIGHT |
| | 0013 | 10.4 M |
| 7 | 0635 | 2.4 M |
| M | 1227 | 10.1 M |
| | 1845 | 2.8 M |
8. Write Briefly use of admiralty sailing directions, admiralty list of Radio Signals and mariner's Handbook. 10