

**B.Sc. (NAUTICAL SCIENCE)**

**Term-End Examination**

**June, 2013**

**BNA-015 : NAVIGATION-II**

**(BRIDGE EQUIPMENT, WATCH KEEPING  
METEOROLOGY AND OCEANOGRAPHY)**

*Time : 2 hours*

*Maximum Marks : 70*

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*Note : Non - programmable scientific calculator is allowed.  
Answer four questions from section- I and three  
questions from section -II.*

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**SECTION -I**

1. Draw plan (Bird's eye view) of bridge of a merchant ship & show location of at least ten navigation equipments and write one purpose of each of them. 10
2. Draw and label dry magnetic compass. Enumerate three points on care of a magnetic compass. 10
3. (a) Explain the working principle of a gyro compass and state use of gyro repeaters. 5  
(b) State the purpose of a marine chronometer & what time does it keep ? How will you find its error on board ship ? 5

4. (a) Explain the working principle and use of sextant with suitable sketch. 5
- (b) Explain working principle of echosounder used on -boardship. 5
- 5 State Lights , Shapes and Sound Signal displayed sounded by following vessels : 10
- (a) Vessel underway 50 meters or more in length.
- (b) Power driven vessel at Anchor
- (c) A vessel a ground
- (d) A vessel not under command underway and making way through water.
- (e) A pilot vessel underway.

## SECTION - II

6. Explain working principle and construction of Aneroid Barometer. 10
7. (a) Explain W.R.T. Radiation 5  
(i) Emission  
(ii) Absorption.
- (b) Differentiate between solar and terrestrial radiations. 5
8. Define the following : 10  
(a) Absolute humidity  
(b) Relative humidity  
(c) D A L R  
(d) Dew point temperature  
(e) Magnetic equator
9. (a) Draw simple sketch of a Barograph and state its purpose on ship. 5  
(b) Write working principle of a Hygrometer . 5  
Sketch and label a Hygrometer.
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