

B.Sc. (NAUTICAL SCIENCE)

Term-End Examination

June, 2011

BNA-015: NAVIGATION-II

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

Time : 2 hours

Maximum Marks : 70

Note : All questions carry equal marks. Answer seven questions in all. Five from Section - I and two from Section - II.

SECTION - I

1. (a) What type of liquid is filled in wet card compass and how do you remove air bubble from same ? 5
- (b) Explain the advantages of quartz crystal chronometer over mechanical winding type 5
2. Explain the principle of sextant with the help of a ray diagram. How will you find Index Error of sextant with the help of sun ? 10
3. (a) Draw a block diagram of the functional elements of the echo sounder. 5
- (b) Explain how to decide whether vessel is crossing or overtaking. 5

4. What considerations shall be taken into account for determining if risk of collision exists ? 10
5. (a) As per Rule 18 describe the responsibilities of a power driven vessel in the event there is a risk of collision with 'NUC,' 'RAM,' fishing or sailing vessel. 5
- (b) Describe the term "vessel constrained by her draught". 5
6. (a) Describe the lights and shapes to be shown by a vessel engaged in underwater operations with obstruction on port side. 5
- (b) Describe the lights and shapes exhibited by a vessel constrained by her draught. 5

SECTION - II

7. Explain why diurnal range of air temperature is large over land where as very small over sea. 10
8. (a) Why are the cloudy nights warmer compared to clear nights ? 5
(b) Define dew point temperature, and absolute humidity. 5
9. (a) What is radiation budget of the earth ? 5
(b) Draw a neat sketch of Aneroid Barometer and explain its principle. 5
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