

B.Sc. (NAUTICAL SCIENCE)**Term-End Examination****December, 2015****BNA-015 : NAVIGATION – II****(BRIDGE EQUIPMENT, WATCH KEEPING
METEOROLOGY AND OCEANOGRAPHY)***Time : 2 hours**Maximum Marks : 70*

*Note : All questions are **compulsory** in Section I. Answer any **three** questions from Section II. All questions carry equal marks.*

SECTION I

1. Explain the principle and working of an Echosounder with a block diagram. 10
2. Sketch the layout of wheel house and write the use of any five equipments. 10
3. Define the following with respect to COLREGS 1972 : 10
 - (a) Vessel constrained by her draft
 - (b) Restricted visibility
 - (c) Under way
 - (d) Not under command
 - (e) Restricted in her ability to manoeuvre

4. What is safe speed ? What factors are considered for determining the safe speed by a vessel fitted with operation radar as per COLREGS ?

10

SECTION II

Answer any *three* questions.

5. Sketch and explain the working of an aneroid barometer. 10
6. Explain the following with suitable sketches : 10
- (a) Temperature Inversion
 - (b) Adiabatic Lapse Rate
7. Explain with a neat diagram, different layers of atmosphere and separation zones with approximate heights. 10
8. (a) Write a short note on greenhouse effect. 5
- (a) Why is diurnal range of air temperature larger over land than that over sea ? 5
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