

B.Sc. (NAUTICAL SCIENCE)

Term-End Examination

June, 2011

**BNA-022 : NAVIGATION IV
(ADVANCED - BRIDGE EQUIPMENT, WATCH
KEEPING, METEOROLOGY AND
OCEANOGRAPHY)**

Time : 2 hours

Maximum Marks

- Note :** (i) *All questions are compulsory.*
(ii) *Ship's weather code is allowed.*
(iii) *Use of calculator is permitted.*

SECTION - A

(BRIDGE EQUIPMENT AND COLREGS)

1. (a) Explain the working of marine radar with the help of a block diagram. 2x5
(b) Describe the information provided by AIS.
2. List four entries each, which are required to be made in following logs : 3x
 - (a) Oil Record Book
 - (b) Movement (bell) Book
 - (c) Official Log Book
3. (a) Explain the various methods to call Master and circumstances under which he should be called. 2x5
(b) Explain the watch keeping duties at sea.

- (a) List the factors to be taken into account by all vessels in determining Safe Speed. **2x4=8**
- (b) Give examples of circumstances, which may make a departure from the rules necessary.
- (a) Describe how to navigate in a traffic separation scheme with reference to :
- (i) entering or leaving the TSS. **2**
 - (ii) The use of inshore traffic zone. **2**
- (b) Describe the procedure for overtaking in a narrow channel. **4**

SECTION - B
(Meteorology and Oceanography)

6. Define the following : 3
- (a) Visibility and factors affecting it.
 - (b) Haze
 - (c) Cloud
7. Explain Anabatic and Katabatic winds.
8. Explain the structure of depression.
9. Course 160° speed 10 Knots. The direction of wind obtained by observing line of waves was 270° . Wind speed by shipboard anemometer was 17 Knots. What direction and force of wind is to be entered into the ship's log book ?
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