

B.Sc. (NAUTICAL SCIENCE)

Term-End Examination

June, 2012

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

Time : 2 hours

Maximum Marks : 70

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

(Bridge Equipment and Colregs)

1. (a) Explain various modes of steering and change over procedure from hand steering to auto pilot and vice-versa. 5
- (b) Explain the principle of doppler speed log. 5
2. List at least *three* entries which are required to be made in the following. 3x3=9
- (a) Official log book
- (b) Oil record book
- (c) Ballast exchange log book

3. Explain duties of the officer of the watch, when the ship is : 2x4=8
- (a) At anchor
 - (b) At Sea
4. (a) State Rule 5 'look out' as per COL REGS '72. 3
- (b) Explain the rule about 'look out'. 6
5. (a) Explain the basic principle of RADAR. 3
- (b) Explain "Alteration of course alone may be the most effective action". 3

SECTION - B

(Meteorology and Oceanography)

6. Define the following : 3x2=6
- (a) Mist
 - (b) Haze
 - (c) Fog
7. Explain basic concepts relating to tropical revolving storms (TRS). 8
8. Explain the formation of tidal streams. 5
9. Decode the following Weather Report : 18x $\frac{1}{2}$ =9
- BBXX ATVH 10123 99408 30492 41398
62828 10143 20082 40084 56028 76364
84364 22234 00175 20808 30211 41006
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