

**DIPLOMA IN NAUTICAL SCIENCE**

**Term-End Examination**

**December, 2007**

**BNA-022 : NAVIGATION IV**

*Time : 2 hours*

*Maximum Marks : 70*

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**Note :** *Answer all questions. Ship's Weather Code is allowed. Use of calculator is allowed.*

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**SECTION A**

**(Bridge Equipment & COLREGs)**

1. Explain the principle on which GPS works. 8
  
2. (a) Describe the basic principles of bridge teamwork. 4  
(b) List the names of log books used on bridge. 3
  
3. State the characteristics of the following : 3×2=6
  - (a) Side light
  - (b) Stern light
  - (c) Towing light
  
4. (a) What is meant by "Risk of collision" ?  
(b) Explain how the use of Radar affects the determination of safe speed. 3+4=7

5. Describe how to navigate in a traffic separation scheme with reference to
- (i) Entering or leaving the TSS
  - (ii) Crossing lanes. 7

### SECTION B

#### (Meteorology & Oceanography)

6. Describe the signs of an approaching tropical revolving storm. 6
7. Write short notes on any **two** of the following : 2×4=8
- (i) Orographic Lifting
  - (ii) Frontal Trough
  - (iii) Radiation Fog
8. Describe development and classification of clouds. 6
9. What are tides and how are they caused ? 5
10. Decode following : 10
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|-------|-------|-------|-------|-------|
| BBXX  | ATVH  | 10123 | 99408 | 30492 |
| 41398 | 62828 | 10143 | 20082 | 40084 |
| 56028 | 76364 | 84364 | 22234 | 00175 |
| 20808 | 302// | 41006 |       |       |