

## DIPLOMA IN NAUTICAL SCIENCE

### Term-End Examination

June, 2007

### BNA-022 : NAVIGATION IV

Time : 2 hours

Maximum Marks : 70

**Note :**

- (i) All questions are **compulsory**.
- (ii) Ship's Weather Code is allowed.
- (iii) Use of calculator is allowed.

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### SECTION A

#### (Bridge Equipment & Colregs)

1. With the help of a block diagram, explain the working of Marine Radar. 8
2. Describe the working principle of AIS and what information is provided by it. 7
3. Describe the term "Safe Speed" and what factors shall be taken into account by all vessels for determining safe speed. 6
4. List the circumstances under which the officer of the watch should call the Master. 6
5. Explain briefly what do you understand by the following :

2x4=8

- (i) Vessel restricted in her ability to manoeuvre
- (ii) Vessel not under command

## **SECTION B**

### **(Meteorology & Oceanography)**

- 6.** Write short notes on any **two** of the following : 8
  - (i) Anticyclone
  - (ii) Col
  - (iii) Fog
  
- 7.** Explain briefly the causes of tsunamis. 6
  
- 8.** Describe the weather associated with Tropical Revolving Storm. 7
  
- 9.** Differentiate between Warm and Cold fronts. 6

**10.** Code the following message of WWXX :

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Position : 15° 35' N 070° 15' E.

Course made good 180°

Speed made good 16 kts.

GMT 08 d 12 h,

Wind 265° estimated at 18 knots

Visibility 10 km,

Pressure 1005.5 h Pa

Air temperature : 18° C

Wet bulb temperature : 16° C

Sea temperature : 20.6° C

Clouds : Covering 5/8 of sky

Nimbostratus and altostratus visible.

No high clouds.

Height of base of lowest cloud 1100 meters.

Present weather : heavy continuous rain

Past weather : continuous rain

Sea : Period 8 seconds, height 0.4 meters

Swell : From 260°, period 5 seconds, height 4 meters