

B.Sc. (NAUTICAL SCIENCE)

Term-End Examination

December, 2013

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

Time : 2 hours

Maximum Marks : 70

*Note : All questions are compulsory. Weather code is allowed.
Use of scientific non-programmable calculator is
permitted.*

SECTION-A

1. What are the different controls of an auto pilot unit ? Explain their effectiveness and working. 10
 2. Explain various modes of steering. How do we change from one mode to another ? 10
- OR**
- Describe the importance of atleast five log books maintained on bridge.
3. Describe five principles to be observed in beeping a navigational watch. 10
 4. Explain principle and working of Doppler log. 10
 5. Explain what is meant by risk of collision and what action shall be taken by a 'give - way vessel' in crossing situation ? 10

SECTION-B

6. Define *any three* of the following : 6
- (a) Fog
 - (b) Haze
 - (c) Smog
 - (d) Frost
 - (e) Dew

7. Explain how tidal stream is caused and its effect on navigation of the ship ? 5

OR

Show Gulf stream and Labrador current on a simple sketch.

8. Decode the following Weather report :- 9
- | | | | |
|-------|-------|-------|-------|
| BBXX | VTHS | 22183 | 99275 |
| 70984 | 41398 | 62416 | 10143 |
| 20208 | 40268 | 52064 | 71652 |
| 84364 | 22234 | 00206 | 20808 |
| 30511 | 41006 | | |
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