

B.Sc. (NAUTICAL SCIENCE)

Term-End Examination

June, 2013

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

Time : 2 hours

Maximum Marks : 70

Note : All questions are compulsory. Ship's weather code is allowed. Use of scientific non-programmable calculator is permitted.

SECTION-A

1. Explain the basic working of marine radar with block diagram. 10
 2. Describe the structure of a GPS system. 5
- OR**
- How does an electromagnetic log work ?
3. What information is transmitted by AIS on a vessel which is underway and how frequently is this information transmitted? 5
 4. List the factors to be taken into account in determining safe speed. 5

5. Write at-least three ways you can call the master on bridge and five circumstances under which he shall be called. 5
6. Write down ten points on how to prepare the vessel for sea. 10
7. Describe following :
- (a) Procedure for overtaking in narrow channel as per Rule-9. 4
 - (b) The actions to be taken on nearing a bend in fairway. 3
 - (c) Navigation of small craft in narrow channel. 3

SECTION-B

8. Differentiate between Anabatic and Katabatic winds. 5

OR

Differentiate between land & sea breeze.

9. Explain briefly causes of storm surges and tsunamis. 5
10. What is pressure gradient and draw with brief explanation any two curved isobaric system ? 10
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