

B.Sc. (NAUTICAL SCIENCE)

Term-End Examination

December, 2013

BNA-024 : SHIP OPERATIONS

Time : 2 Hours

Maximum Marks : 70

- Note :**
- (i) Question No. 1 and 2 are **Compulsory**.
 - (ii) Attempt **any five** of the remaining seven questions.
 - (iii) Use of non programmable scientific calculator is **allowed**.
 - (iv) Use M.V. Hindship table is **allowed**.

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1. A ship of W 9000t, KG 8.3m loads 600t of cargo 10
(KG 4.0m, 3m to port of centre line) and
discharges 400t of cargo (KG 9.0m, from 5m to
port of centre line). 200t of cargo is then shifted
upwards by 5m and to starboard by 8m. 300t of
cargo is then shifted 1m downwards and 4m to
port. Find the list if the final KM is 8.95m.
2. M.V. 'Hindship' floating in condition No.5 10
discharges the entire cargo from No.1 T.Deck,
No.5 poop deck and refrigerated cargo spaces.
No.4 DB tank(c) is filled with water ballast. FSC
in final condition is 0.0895m. Calculate her
GM (fluid).

3. Draw a profile view of container ship showing holds, DB arrangements, peak tank arrangements, engine room and cell guide arrangement. 10
 4. Sketch and describe the following briefly : 10
 - (a) Sounding pipe
 - (b) Ventilator
 - (c) Drip tray
 - (d) P/V breaker
 5. Sketch and explain Hogging and Sagging of the ship. Describe loading conditions which give rise to above stresses. 10
 6.
 - (a) State the conditions under which oily mixtures from machinery space bilges may be discharged into the sea. 5
 - (b) State the condition under which oily mixtures may be discharged from cargo spaces into the sea from an oil tanker. 5
 7.
 - (a) List out five essential tasks to be carried out during boat drill. 5
 - (b) Write atleast five entries to be made in Garbage Record Book 5
 8. State the importance of following conventions : 10
 - (a) Load line
 - (b) STCW' 95
 9. Describe the functions of the following : 10
 - (a) Reciprocating pump
 - (b) Purifiers
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