B.Sc. (NAUTICAL SCIENCE)

Term-End Examination

June, 2014

BNA-024 : SHIP OPERATIONS

Time : 2 Hours   *Maximum Marks : 70*

Note :   (i)   *Question No. 1 and 2 are* **Compulsory.**

         (ii)   *Attempt* **any five** *questions from remaining.*

         (iii)   *M.V. Hindship tables and non programmable scientific calculator is allowed.*

1. On a ship of 10000 tonnes displacement,   **10** KG : 7.75 m, following operations took place :

     (a)   Discharged 1000 t, KG = 4.0 m

     (b)   Discharged 2000 t, KG : 9.8 m

     (c)   FW taken : 500 t KG : 6.5 m

     (d)   500 t of fuel taken, KG : 0.5 m

     (e)   500 t of cargo shifted from main deck cargo hold (KG : 4 m) (KG : 12 m)

     Find her final KG.

2. A ship with W = 5532 t, KM : 8.7 m, KG : 8.5 m   **10** has No 3 DB Tank partly filled with DO (RD : 0.88). If moment of Inertia of No 3 DB tank about its centre line is $1428 m^4$, find GM (fluid) of the ship.

3. Draw profile of an oil tanker and label atleast ten   **10** compartments.

4. Sketch and describe following :   **10**
   (a) Sounding pipe
   (b) Air pipe

5. List the entries to be made in the Garbage Record   **10**
   Book.

6. Write short note on following :   **10**
   (a) Steering Gear
   (b) Purifiers

7. Write brief purpose of following GMDSS   **10**
   equipment on ship :
   (a) SART
   (b) EPIRB
   (c) MF/HF DSC
   (d) INMARSAT EPIRB
   (e) Two way radio Telephony apparatus

8. What is the purpose of hoisting following interco   **10**
   flags :
   (a) B
   (b) G
   (c) H
   (d) Q
   (e) S