No. of Printed Pages : 2

BNA-016

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B.Sc. (NAUTICAL SCIENCE)

Term-End Examination

December, 2013

BNA-016 : CARGO HANDLING, STOWAGE AND SEAMANSHIP - I

Time : 2 hours *Maximum Marks : 70*

Note : *All questions are **compulsory**. Non - Programmable scientific calculator is **allowed**.*

1. A rectangular tank has a total depth of 21 m and a volume of 20600 m^3, which includes a trunk way of depth of 1 m and volume 600 m^3. Find the ullage when 16320 t of oil of RD 0.8 is loaded. **10**

2. Draw plimsoll marks, Load line of a port side of a ship less than 100 m in length and give a brief description of the same. **10**

3. Define following (with suitable sketch where applicable) : **5x2=10**
   (a) Bale capacity
   (b) Stowage factor
   (c) Load density
   (d) Broken stowage
   (e) ullage

4. (a) Write short note on "stowage, segregation and separation of cargoes". **5**
   (b) List the factors to be taken into account with regards to cargo planning and load distribution prior loading any cargo. **5**

5. Write five safety precautions each to be adopted when : **2x5=10**

(a) Working on stage while painting the bridge front bulkhead.

(b) Lifting a 30 kg cement bag from the floor and placing it on the rack in the store.

6. Sketch and explain various types of slings used for loading and unloading of cargoes and stores. **10**

7. (a) Explain the following terms : **5**

(i) Load Displacement

(ii) TPC

(iii) Light Displacement

(iv) Deadweight

(v) Dock water allowance

(b) Draw a side elevation of the ship and show Rudder, Air pipes, Hatch-covers, Ventilators and peak tanks. **5**