

B.Sc. (NAUTICAL SCIENCE)

Term-End Examination

00115

June, 2015

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

Time : 2 hours

Maximum Marks : 70

Note : Answer all questions. Use of non-programmable scientific calculator is allowed.

1. A vessel loads upto her summer draft in RD 1-012. She then proceeds to another port in RD 1-020 consuming 20 t of Fuel Oil enroute. At the next port, after loading 200 t of cargo, she is once again on her summer draft.

At the summer draft water plane Max L 120 m,
B 20 m and C_w 0.82

calculate :

(i) Load Displacement

(ii) FWA

10

2. A rectangular tank of dimensions L : 15 m, B : 12 m, H : 10 m has a cylindrical trunkway over its crown. The axis of the trunkway is vertical, height 0.8 m and radius of cylinder 1.2 m. Oil of RD 0.95 is to be loaded keeping 2% volume of oil for expansion.

Calculate :

(i) Mass of Oil

(ii) Final Ullage

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3. Write short notes on the following (2 – 3 lines only):

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(i) Broken stowage

(ii) Ro Ro ships

(iii) Cargo sweat

(iv) Ship sweat

(v) Gun Tackle rove to disadvantage (Diagram only)

4. A cargo hold has a dimension of L : 20 m, B : 20 m, H : 15 m. Find the maximum weight of drums that can be loaded in the hold, if SF of drum is $2.0 \text{ m}^3/\text{t}$ and Broken Stowage is 15%.

If Load Density of tank top cannot exceed 6.5 t/m^2 , what will be the quantity of cargo to load?

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5. Explain the following with neat sketches as applicable : 10
- (i) Flare
 - (ii) Load Density
 - (iii) TPC
 - (iv) Sheer
 - (v) FWA
6. Explain the following giving at least 5 points each : 10
- (i) Precautions to be observed while painting the Funnel.
 - (ii) Precautions to be observed during Welding/Flame cutting.
7. Enumerate the various factors that you will keep in mind when planning stowage of General Cargo. 10
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