DIPLOMA IN NAUTICAL SCIENCE

Term-End Examination

December, 2007

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

Time : 2 hours   *Maximum Marks : 70*

Note :   *All questions are* **compulsory**. *Use of scientific calculator is permitted.*

1. A rectangular tank is 20 m (L) × 20 m (B) × 12 m (D). Find how many tonnes of oil of specific gravity of 0·8 can it hold, if it was required to leave 02% of the volume of oil loaded for expansion. Find the mass of oil and the ullage on loading.   **10**

2. (a)   Define the following terms :
        (i)   Seaworthiness
        (ii)   Flash Point
        (iii) Broken Stowage
        (iv)   Load Density
        (v)   Measurement Cargo

    (b)   Distinguish between LPG and LNG cargoes. How are these different from refrigerated cargoes ?   **5+5**

3. Write five checks and five precautions that should be observed when entering a fore peak tank.   **5+5=10**

4. Write at least five points for care and maintenance that should be taken for natural fibre ropes. **10**

5. Explain the following giving five points each : **5+5=10**

    (a) The procedure for surface preparation prior to painting on weather deck.

    (b) Personal protection measures to be exercised during the operation as in (a) above.

6. Explain the following with sketches, wherever applicable :

    5×2=10

    (a) Rake

    (b) Camber

    (c) Forward Perpendicular (FP)

    (d) Sheer

    (e) Length Between Perpendicular (LBP)

7. Draw a neat profile view of a tanker and label the following parts : **5+5=10**

    (a) Cargo tanks

    (b) Tank entrance or Ullage port

    (c) Forward collision bulkhead

    (d) Pump room

    (e) Aft peak tank