DIPLOMA IN NAUTICAL SCIENCE

Term-End Examination

June, 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 hollow cylinder of 1·0 mtr dia and 10·0 mtr length, floats in fresh water at a draft of 0·2 mtr with its axis horizontal. Find its mass. *12*

2. Using the following particulars for a vessel M.V. "IGNOU STAR", draw the various loadlines of the vessel on Starboard side and indicate the depth at which each loadline is located. Will this vessel have WNA mark ? Give reasons for your answer. *13*

Vessel's particulars :

Length overall [LOA] : 100 mtrs

Summer draft (S) : 9120 mm

FWA : 205 mm

Summer free board : 3050 mm

3. Define the following terms : *10×1=10*

(a) Principle of Floatation

(b) Displacement

(c) Deadweight

(d) Water Plane Coefficient

(e) Block Coefficient

(f) TPC

(g) Dock Water Allowance

(h) List

(i) Metacentric Height (GM)

(j) Righting Lever (GZ)

4. What are the responsibilities of a Duty Officer when keeping Cargo Watch on a Bulk Carrier ? List additional precautions which need to be taken for preventing pilferage during Cargo operations. *10*

5. Write at least three precautions each one will observe while carrying out the following tasks on board ship : *5×3=15*

(a) Manual lifting and Carrying weights

(b) Painting bridge front bulkhead

(c) Using portable rope ladder

(d) Using electric tools

(e) Using a stage

6. Define the following with sketches, where applicable : *5x2=10*

(a) Ullage

(b) Bale capacity

(c) Stowage factor

(d) Load density

(e) Seaworthiness