INDIAN MARITIME UNIVERSITY
(A Central University, Government of India)

May/June 2016 End Semester Examinations
B.Sc. (Nautical Science) - Fifth Semester (2013 batch onwards)

NAVAL ARCHITECTURE - V (T 2504)

Date : 08.07.2016 **Maximum Marks: 70**
Time: 3 Hrs **Pass Marks : 35**

Section – A **(Ship Construction)** **Marks: 30**

- Question No. **1** is **Compulsory** and Carries **10 marks**.
- Attempt any **Two** of the remaining, each carries **10 marks**.

1. (a) Write Short notes on "Special Constructional features of "Ro Ro Ships" (3)
   (b) Draw and Label Midship Section of a "Gas Transport Membrane Tank" with respect to Gas Carriers. (7)

2. Write Short notes on the following
   (a) Body Plan (5)
   (b) Sheer Plan (5)

3. (a) Discuss the Advantages & Disadvantages for the use of Aluminum in Ship building. (6)

   (b) With a neat diagram, describe how Aluminum Plate is Connected to Steel Plate in Ship building. (4)

4. (a) Categorise different types of Chemical Tankers and Sketch location of their Cargo Tanks, as per IBC Code. (5)
   (b) Classify & Explain different types of Gas Carriers as per IGC Code. (5)

Section – B **(Ship Stability)** **Marks:40**

- Question No. **5** is **compulsory** and carries **10 marks.**
- Attempt any **THREE** of the remaining and each carries **10 marks**

5. (a) State Simpson's First Rule and Explain, how it is used for finding Second Moment of Area (Moment of Inertia). (4)
   (b) The Vertical Bulkhead of a Ballast Tank is of a rectangular Shape of Breadth 8 m and Height 12m. The tank is filled up with Salt Water to a Sounding of 10m. Find the position of "Centre of Presure" from the top of the Bulkhead. (6)

6. A box Shaped vessel of length 90m and 15m breadth is floating in SW at an even keel draft of 5m, has a midship compartment,10m long and extending side to side. This compartment has a W/T flat 3m above the keel, and gets bilged. If KG in original condition is 4.7m. Calculate new Drafts and GM in bilged condition. (10)

7. Explain, with the aid of diagram and appropriate formulae, the effect of increase of freeboard, on ship stability (assuming other parameters – Draft, length, KG etc. remain unaltered). (10)

8. M.V. "HINDSHIP" floating at a draft of F 5.70m, A 7.60m, KG 6.12m, loads 400 t of Cargo in No 3 TD, 2 m off the Centre line to port. Calculate her angle of List (assuming FSC NIL). (10)

9. Write in detail various shipyard practices and its layout. (10)

****