

INDIAN MARITIME UNIVERSITY

(A Central University, Government of India)

END SEMESTER EXAMINATION DEC 2017

Programme: B.Tech (Marine Engineering) **Semester:** VI
Subject Name: Double Hull Tanker Vessels **Subject code:** UG11E2601
Date: 03.01.2018 **Maximum Marks:** 100
Time: 3 Hours **Pass Marks:** 50

PART – A (10 X 3 Marks = 30 Marks)

(All questions are compulsory)

1. (a) What is the year, regulation and annex - thru which Marpol was first amended to make it mandatory for tankers of 5000 DWT and more to be fitted with Double Hull.
- (b) Define Operational loads and Environmental loads with respect to Design considerations of tanker vessels.
- (c) Explain the term Segregated Ballast Tank.
- (d) Draw and explain the advantages of L shaped double side ballast tanks in DH tanker vessels.
- (e) Why it has become difficult for cargo tank close up survey in DH Tankers. What were the alternative measures carried out.
- (f) Write down the formula for calculating the Light Ship weight using ratio Number, in the Hull weight parametric calculation.
- (g) Mention the IMO requirements for Double bottom height requirements.
- (h) Draw and explain the term Length between Perpendiculars.
- (i) Explain the term Stringers and Girders.
- (j) What are the functions of Scrubber tower in an Inert Gas System.

PART – B (5 X 14 Marks = 70 Marks)

(Answer any 5 of the following)

2. With the help of sketches explain the operational disadvantages in terms of stability of double hull tankers over single hull tankers and mention the remedial actions taken.
(14 Marks)
3. (a) Explain the term Loading Guidance Information.
(4 Marks)
(b) What are all the plans to be supplied onboard indicating the new building and renewal thickness for each structural item. (10 Marks)
4. (a) Explain in detail about CAS. (7 Marks)
(b) Explain Phasing Out Schedule of single hull tanker in detail.
(7 Marks)
5. (a) Explain Sagging and Hogging of Ship and their effects. (8 Marks)
(b) Explain the term COW and Slop Tank. (6 Marks)
6. Draw a block diagram and explain the operation of an I G System of an oil tanker using boiler flue gas.(14 Marks)
7. (a) Draw a Deepwell cargo pump and label the parts. (10 Marks)
(b) Explain the Advantages and Disadvantages of this Pump.
(4 Marks)
8. Write an essay on Economic aspects of Double Hull Tanker Vessels.
(14 Marks)
