Indian Maritime University

(A Central University, Govt of India)

End Semester Examinations- June-July 2019

B.Tech (Marine Engineering)

Semester – VI

Double Hull Tanker Vessels (UG11E1601 / UG11E2601)

Duration: 3 Hrs	**Max Marks: 100**
Date: 5-7-2019	**Pass Marks: 50**

Part A **(10x 3= 30 Marks)**

(Compulsory Questions)

1. Answer all questions: Question carries 3 marks each.

   a) What is free surface effect and how it can be minimised in tanker.

   b) Describe hydrostatically balanced loading and sloshing loads.

   c) What is oil record book.

   d) Briefly describe Shipboard Oil Pollution Emergency Plan.

   e) Describe Flame arrester and Flame Screen

   f) Describe confined space entry requirements?

   g) What is Purging and Gas Freeing of a tanker?

   h) What is the difference between Clean Ballast tanks and Segregated Ballast tanks?

   i) What are Lightweight and Deadweight of a ship?

   j) Describe atleast three parameters of double hull modern tankers those has improved operation of tanker.

Part B **(5x 14= 70 Marks)**

(Answer any five of the followings)

2. (a) Briefly describe the origin of Double Hull Tanker and their advantage over single hull tankers. (9)

   (b) How Tankers are categorised on basis of their Size and Cargo? (4+1)

3. (a) What is Condition Assessment Scheme (CAS), briefly describe the requirements. (7)

   (b) How pre-MARPOL Tankers are categorised based on their year of built and describe their phase out time. (7)

4. (a) Neatly make a labelled sketch of Mid Ship Section of an Oil tanker. (10)

   (b) Describe testing procedure of tank and cofferdam. (4)

5. (a) Explain Open type, Restricted type, Closed type and Indirect type gauging system. Describe operation of Radar gauge. (10)

   (b) Describe how tank contents can be ascertained by sounding and ullaging a cargo tank. (4)

6. (a) Draw outline sketch of a submersible pump and explain how it operate including cargo stripping operation. (10)

   (b) Explain cofferdam purging. (4)

7. Sketch and describe Longitudinal Framing, Bottom, Side, and Deck Transverses (14)

8. What is Crude Oil Washing? Describe the checks to be done before starting, during and after finishing the operation. What is the immediate action to be taken in case of in sufficient Inert gas supply? (3+9+2)