INDIAN MARITIME UNIVERSITY
(A Central University, Govt. of India)

B.Tech. (Marine Engineering) - Semester - VIII
December 2015 End Semester Examinations

Advanced Marine Technology
Subject Code: UG11T1804

Time: 3 hrs | Max Marks: 100
Date: 4.1.2016 | Pass Marks: 50

Part - A

(3x10 = 30 Marks)

Compulsory Question

1. (a) Expand the following abbreviations :-

   MARVS, IBC, TLV, OCIMF, IAPP

   (b) Name the various insulation materials used in Gas Carriers.

   (c) What is the difference between a PV Breaker and a PV valve?

   (d) Explain condition monitoring system employed on board ships.

   (e) What are the objectives of using Crude Oil Washing of cargo tanks in a crude carrier?

   (f) Describe Category X, Y, Z and OS chemical cargos.

   (g) Draw the Mollier Diagram for a single stage direct re-liquefaction cycle of a semi-pressurised gas carrier.

   (h) What is intrinsically safe equipment?

   (i) With reference to oil tankers, what are the hazardous and non- hazardous areas?

   (j) What is condition assessment of Bulkcarriers?

Part - B

Answer any five of the following questions **(5 X 14 = 70 Marks)**

2. (i) Sketch and describe an Inert Gas System as installed in a Crude oil Carrier. (8)
   (ii) Name all the safety equipments fitted in the above Inert Gas System. (6)

3. (i) With a simple sketch, explain the arrangement of "Compressor room/electric motor room" on a Gas carrier. (9)
   (ii) Explain briefly ESD (Emergency Shut –down) systems as used on Gas Carriers. (5)

4. (i) List the advantages of using submersible type of centrifugal cargo pump in chemical tankers. (5)
   (ii) With the help of line diagram, explain the cargo pumping arrangement of one cargo tank in a chemical tanker. (9)

5. (i) Name the cargos usually carried in a bulk carrier with associated hazards. (6)
   (ii) Sketch and describe a cargo hold structural arrangement of a Bulk carrier. (8)

6. With reference to a Car carrier,

   (i) Explain the ventilation arrangements provided in the car decks. (7)

   (ii) With the help of a simple sketch, explain the arrangement provided for loading the vehicles on board. (7)

7. (i) With reference to a crude oil tanker, sketch and describe a " Free Flow System" for cargo loading and un-loading operations. (9)

   (ii) What are the advantages and disadvantages of the above system compared to other Systems. (5)

8. (i) Explain a Common Rail Fuel Injection system as installed in a modern marine Slow speed diesel engine. (10)

   (ii) What are the advantages of the above system compared to methods adopted in conventional engine. (4)

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