

INDIAN MARITIME UNIVERSITY
(A Central University, Government of India)
END SEMESTER EXAMINATIONS –DECEMBER 2018
B.SC (Nautical Science)
Semester-V
Specialised Cargo Handling and Stowage
(UG21T3504)

Date: 03.01.2019
Time: 3Hrs

Maximum Marks: 70
Pass Marks: 35

Note: Question No. 1 is compulsory.

Answer any 6 questions from remaining 8 questions (each of 10 marks).
Non Programmable Scientific Calculator is permitted if required.

1. Write full form of following. (2 x 5 =10 marks)
 - (a) COW
 - (b) ISGOTT
 - (c) MSDS
 - (d) SIGTTO
 - (e) ODCMS
2. Explain in brief:
 - (a). Multipurpose Vessel and its Cargo. (5 marks)
 - (b). Refrigerated ships and its Cargoes. (5 marks)
3. (a) Explain bay plan of container vessel. (5 marks)
(b) Write briefly about Anti Heeling tanks. (5 marks)
4. (a). Distinguish between Cooled, chilled and frozen Cargoes with examples. (5 marks)
(b). What all precaution we should take while working on Ref. Cargo vessels? (5 marks)
5. (a). Draw and explain flammability diagram. (5 marks)
(b). What are the hazards and benefits of crude oil washing? (5 marks)
6. (a). What precautions we should take while loading / discharging a heavy lift? (5 marks)
(b). How to prepare a Ro-Ro vessel for loading of trailers and vehicles. Explain briefly. (5 marks)
7. (a). What is the purpose and use of IBC code? (5 marks)
(b). What are the hazards associated with chemical cargoes. (5 marks)

8. (a). What is the use of Re - liquefaction plant? (5 marks)
(b). Sketch and label type A prismatic tank in a fully refrigerated gas carrier. (5 marks)

9. Cargo tank: Full Volume = 3000 m³

- Cargo Butane: C₄H₁₀ *C₄H₁₀*
- Molecular weight of Butane= 58.
- Ambient Pressure= 1.013 bars
- Cargo vapour temperature= 6 c *6°C*
- Cargo vapour pressure= 6 bars.
- Ideal gas molar volume at STP= 23.645 m³.
- Cargo loaded to 98% volume of tank.
- Calculate vapour density and mass.

(10 marks)
