

**INDIAN MARITIME UNIVERSITY**  
(A Central University Government of India)  
**END SEMESTER EXAMINATIONS- JUNE/JULY 2019**  
**DIPLOMA IN NAUTICAL SCIENCE**  
**Semester: II**  
**MARPOL & MARINE ENGINEERING KNOWLEDGE**  
**(UD11T3205)**

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**Date: 28.06.2019**  
**Time: 2 hours**

**Max. Marks: 70**  
**Pass Marks: 28**

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**PART-A: MARPOL**

**(Question No. 1 is compulsory. Answer any 1 out of remaining 2 Questions in this section)**

1. Objective questions, fill in the blanks, True or False from **Unit- 1 (Annex I to VI)** (1 x 10 = 10 Marks)
  - (i) Oil record Book Part I is applicable for tanker-(True/False)
  - (ii) Red sea is a special area as per Annex I-(True /False)
  - (iii) ODMCS monitors Oily Mixture from Engine Room-(True /False)
  - (iv) Jettisoning of dangerous cargo can be done for the safety of ship  
True /False
  - (v) Category X of NLS presents a Major Hazard to Marine Resources or human Health- True /False
  - (vi) Glass Bottles, Paper, Wood can be disposed outside special areas- True/False
  - (vii) Ships with sewage treatment Plant can discharge the treated sewage more than 12 nautical miles from nearest land-(True /False )
  - (viii) From 1<sup>st</sup> Jan 2020 Sulphur content in bunker fuels should not be more than 0.5% -(True /False)
  - (ix) VOC regulations as per annex VI is applicable to all ships-(True/False)
  - (x) BDN is mandatory for all bunkering operations-(True/False)
  
2. 2 x 5 = 10 marks)
  - (a) State the regulations to control any discharge into the sea of oil or oily mixtures from ships Machinery space ?
  - (b) How is Sox emissions controlled on ships as per annex VI? What are ECA for SOx and NOx Emissions?
  
3. (2 x 5 = 10 marks)
  - (a) Explain about the different methods of Ballast water Exchange practiced on ships with advantage and disadvantages?
  - (b) As per Annex V, write about the regulations regarding disposal of different kinds of Garbage on board ships?

**PART-B: MARINE ENGINEERING**  
**(Question No. 4 is compulsory. Answer any 4 out of remaining 5 Questions in this section)**

4. State the uses of following equipment (1 x 10 = 10 Marks)
- i. Auxiliary engine
  - ii. Exhaust gas boiler
  - iii. Emergency generator
  - iv. Crankshaft
  - v. Tail end shaft
  - vi. Sewage treatment plant
  - vii. Boiler gauge glass
  - viii. Oily water separator
  - ix. Incinerator
  - x. Refrigeration plant
5. (a) Enumerate different platforms in the engine room. Where is the main engine fitted? (2x 5 = 10 Marks)
- (b) What is purpose of auxiliary boiler safety valve? Name five boiler mountings?
6. (a) Write short notes on gate valve. (2x 5 = 10 Marks)
- (b) What are applications of Positive Displacement Pump and Dynamic Pump?
7. (a) Name five components of Main Engine and explain their function? (2x 5 = 10 Marks)
- (b) Explain principle of operation of a shipboard fresh water generator. Is the water produced potable?
8. (a) State the criterion for use of an oily water separator. (2x 5 = 10 Marks)
- (b) Explain how and when a steering gear test is carried out
9. (a) State the advantages of a hydraulic system. (2x 5 = 10 Marks)
- (b) List the safety precautions to be taken while working with compressed air. Explain the hazards associated with compressed air.

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