

**INDIAN MARITIME UNIVERSITY**  
(A Central University, Government of India)  
May-June 2018 End Semester Examinations  
**Diploma in Nautical Science (DNS)**  
Semester : II  
**MARPOL & Marine Engineering Knowledge**  
**(UD11T 3205)**

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Date: 08-06-2018

Maximum Marks : 70

Time: 2 Hrs

Pass Marks : 35

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**Section – A: MARPOL**

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

1. Define the following (1 Mark x 10 = 10 Marks)
  - (i) Oily Mixture
  - (ii) Special Area
  - (iii) PSSA
  - (iv) SMPEP
  - (v) Garbage
  - (vi) Nearest Land
  - (vii) Sewage sources onboard ship
  - (viii) ECA
  - (ix) VOC
  - (x) ODS (Annex-VI)
  
2. (a) Explain the conditions under which Oily Mixtures may be discharged into the sea from an Oil Tanker, as per MARPOL Annex I (5 Marks)  
(b) Explain the regulations for discharge of Sewage into sea, as per MARPOL Annex IV (5 Marks)
  
3. (a) Explain the regulations laid down in the International Conventions for the Control and Management of ships' Ballast Water and Sediments (5 marks)  
(b) Explain the regulations for the disposal of Garbage into sea, as per MARPOL Annex V (5 marks)

## Section – B: MARINE ENGINEERING KNOWLEDGE

(Question No. 4 is compulsory. Answer any 4 out of the remaining 5 Questions in this section)

4. State True or False for the following statements

(1 x 10 = 10 Marks)

- i. Sea suction valves are located on the upper platform of the Engine Room
- ii. ECR stands for Engine Controlled Remotely
- iii. Oily Water separator of Engine Room can be used for pumping out slop tank residues.
- iv. Emergency air compressor cannot be used to fill up main air receiver.
- v. Gate valves are not suitable to partially open operation or flow regulation.
- vi. A Diesel Engine is a internal combustion engine.
- vii. Reciprocating pump must not be started with discharge valve shut.
- viii. Emergency steering must be tested once in a week.
- ix. Alternative refrigerant to R12 is R134a
- x. Smoke tube boilers are used for high pressure requirement e.g. on oil tankers.

5. (a) List the Machineries in the Engine Room (5 Marks)

(b) Explain the working of an Air Compressor (5 marks)

6. (a) List the types of Valves and their functions (5 Marks)

(b) Explain the working of a Centrifugal Pump (5 Marks)

7. (a) Explain the working of a 2 stroke Diesel Engine (5 marks)

(b) Explain the working of an Evaporator (FWG) (5 Marks)

8. (a) Explain the working of an Oily Water Separator (5 Marks)

(b) Explain the working of a Two Ram Steering Gear (5 Marks)

9. (a) State Pascal's and Bernoulli's Principle (5 Marks)

(b) Explain the safety precautions to be observed while working on hydraulic system and also list the dangers associated with hydraulic system (5 Marks)

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