

**Indian Maritime University**  
**(A Central University, Govt. of India)**  
**End Semester Examinations – December 2022**  
**Programme Name: DNS**  
**Semester: II**  
**Subject Code: (UD11T5205)**  
**Subject Name: MARPOL & MARINE ENGINEERING KNOWLEDGE**

**Date: 16.12.2022**  
**Time: 2 Hours**

**Max. Marks: 70**  
**Pass Marks: 35**

General Instructions

- (i) All Sections (A, B & C) are to be attempted.
- (ii) Options, if any, are specified in respective section.

**Section A**

**Fill in the banks:**

**(1 Mark x 10 = 10 Marks)**

1. IMDG code states detailed requirements of Annex \_\_\_\_\_ of MARPOL.
2. Annex II of the MARPOL is "International regulations for the \_\_\_\_\_ of pollution by noxious liquid substances in bulk".
3. The youngest MARPOL Annex in terms of coming into force is Annex \_\_\_\_\_.
4. VOC stands for \_\_\_\_\_.
5. The rate of discharge of oil in liters per hour at any instant divided by the speed of the ship in knots at the same instant is known as \_\_\_\_\_.
6. UMS stands for \_\_\_\_\_.
7. Generator on ship's are having \_\_\_\_\_ stroke engine.
8. Inside an evaporation type fresh water generator, water is made to boil at temperature less than 100°C due to \_\_\_\_\_ in shell.
9. Exhaust valve and fuel injectors are mounted on the \_\_\_\_\_ of the Main engine.
10. Main seawater pump is situated on the \_\_\_\_\_ Engine Room Platform.

**Section B**

**FIVE QUESTIONS OF 02 MARKS EACH. SHORT ANSWER TYPE QUESTIONS**

**(2 Mark x 5 = 10 Marks)**

11. Define Sewage.
12. What is the difference between SOPEP and SMPEP?
13. Define scavenging.
14. Describe why fusible plug is used.
15. Where is two-stroke engine used on ship and give the reason of use?

### Section C

**Answer five out of seven questions. (10 Marks Each)**

- 16 (a). State the conditions under which Oily Mixtures may be discharged into the sea from the cargo spaces of an Oil Tanker.  
16 (b). Explain MARPOL 73/78. **(5 Mark x 2 = 10 Marks)**
- 17 (a). State the requirements of "Procedures and Arrangement Manual" as required under Marpol Annex-II.  
17 (b). Draw a neat-labeled diagram of a gate valve. **(5 Mark x 2 = 10 Marks)**
- 18 (a). Explain the requirements of Marking and Labeling Packages in MARPOL Annex III.  
18 (b). Sketch and Label a Water tube boiler. **(5 Mark x 2 = 10 Marks)**
- 19 (a). State conditions under which sewage can be discharged into sea.  
19 (b). Compare between Centrifugal and Positive Displacement pumps with respect to capacity, suction and discharge pressures and usage. **(5 Mark x 2 = 10 Marks)**
- 20 (a). Write a short note on "Garbage Management Plan".  
20 (b). Sketch and label a Fresh Water Generator. Normally what is the heat source and the reason why water boils from this heat source? **(5 Mark x 2 = 10 Marks)**
- 21 (a). What are the sources of air pollution?  
21 (b). Draw a neat & labeled sketch of a 2-ram steering gear. **(5 Mark x 2 = 10 Marks)**
- 22 (a). Explain Ballast water management plan.  
22 (b). Write the advantages and drawbacks of hydraulic system. **(5 Mark x 2 = 10 Marks)**

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