

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)
