

Indian Maritime University
(A Central University, Govt of India)

Mar/Apr'26 SE

Programme Name: B Tech (ME)

Semester: IV

Subject Code: UG11T4404

Subject Name: Marine Pollution Prevention and Safety

Date: 27.03.2026	Max Marks: 70
Duration: 03 Hrs	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

Ten MCQs of 01 Mark each – Choose the correct answer as applicable.

(1) Administration surveyors when checking foreign Flag ships in their ports for compliance of international regulations such as MARPOL / SOLAS is called

- (A) FSI (Flag State Inspection) (B) PSI (Port State Inspection)
(C) Annual Survey (D) Intermediate Survey

(1)

(2) Validity of certificates issued by the Administration for compliance of MARPOL

- (A) 3 years (B) 5 years (C) 7 years (D) 10 years

(1)

(3) Engine Room oily cotton rags when incinerated onboard to be recorded in

- (A) Oil Record Book No. I (B) Oil Record Book No. II
(C) Garbage Record Book No. I (D) Garbage Record Book No. II

(1)

(4) Crude oil tanker slop tank discharge to be recorded in

- (A) Oil Record Book No. I (B) Oil Record Book No. II
(C) Cargo Record Book (D) Ballast Water Record Book

(1)

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- (5)** Year 2023 is the 50th year of Adoption of IMO Convention
(A) SOLAS (B) MARPOL
(C) CLC (Civil Liability Convention) (D) LDC (London Dumping Convention) (1)
- (6)** Special Permit required under London Dumping Convention is issued by
(A) Designated Authority at IMO (B) Designated National Authority
(C) Designated Person Ashore (DPA) (D) Port State Control (PSC) Authority. (1)
- (7)** Item that is not mandatory (only recommendary) as per MARPOL
(A) Sludge Tank (B) Bilge Holding Tank
(C) Slop Tank in oil tankers (D) Standard Discharge Connection (1)
- (8)** Most harmful cargo (noxious liquid) carried in chemical tankers is under
(A) Z Category (B) Y Category (C) X Category (D) Other Category (1)
- (9)** Oil Pollution Act (OPA) 1990 is applicable in
(A) Japan (B) USA (C) India (D) China (1)
- (10)** Civil Liability Convention (CLC) 1969 covers spill of persistent oils from
(A) Oil tankers in ballast voyages (B) Oil tankers in loaded / laden voyages
(C) Oil spill outside Territorial water (D) Oil spills from war ships (1)

Section B

Five Questions of 02 Marks each

- 11.** State the full form of IOPPC, SOPEP and SMPEP. Which one is specifically applicable for ships carrying Noxious Liquid (Chemical Tankers) as per MARPOL.
- 12.** State the full form of OPRC and the purpose of this IMO convention.
- 13.** Define Clean Ballast Tank (CBT) and Segregated Ballast Tank (SBT).
- 14.** Define "nearest land" and food waste discharge criteria outside Special Area.
- 15.** Explain the need of IMO International Anti-fouling Systems (AFS) Convention.

Section C

Seven Questions of 10 Marks each of which any 05 questions to be answered.

TMI **16. (a)** State the MARPOL requirements for pumping out engine room bilge. (Machinery space of all ships) **(b)** Explain what we can do with the pump room bilge collection in oil tankers. Can it be pumped out at sea in Special Area?

TMI **7+3**

17 (a) Describe working of 15 ppm Oily Water Separator and type of pump used **(b)** State the parameters to be recorded in the relevant ORB for discharge of machinery space bilge collection.

6 + 4

18 (a) Define enclosed space with examples onboard. Explain "Enclosed Space Entry Permit". **(b)** Define hot work with examples onboard. Explain "Hot Work Permit"

TMI **5 + 5**

19 (a) Define "Special Area" and "Emission Control Area (ECA)". State the maximum Sulphur limit allowed in marine fuel oil in the respective ECA. **(b)** State the purpose of Incinerator on-board. Where to record if Fuel oil Sludge is incinerated onboard? Can sludge incineration be done in ECA?

6 +4

20 (a) Sketch and describe working of a biological Sewage Treatment Plant used on-board. **(b)** State the purpose of Sewage Retention System (Holding Tank) and how sewage from Sewage Holding Tank can be discharged at sea.

TMI **7+3**

21. (a) Define the purpose of ISM Code and SMS (Safety Management System) **(b)** Explain "risk assessment" in ISM Code and importance of "tool box talks" prior to repair and maintenance work onboard ship.

3+7

22. (a) Describe pollution prevention measures for onboard bunkering activity. Which manual to be referred for bunkering check lists? **(b)** Explain the purpose of ballast water and the BWM Convention. State "ballast exchange" requirements.

TMI **5+5**

