

INDIAN MARITIME UNIVERSITY

END SEMESTER EXAMINATIONS - DECEMBER 2025

PROGRAMME NAME - MBA (ITL/PSM)

SEMESTER - III

SUBJECT CODE - PG22/21E3309

SUBJECT NAME - FREIGHT DERIVATIVES AND RISK MANAGEMENT IN SHIPPING

Date - 24.12.2025	Max Marks - 60
Duration - 03 Hours	Pass Marks - 30

GENERAL INSTRUCTIONS: ALL SECTIONS (A, B & C) are to be attempted

Options: If any are specified in respective section

Section A: Answer all. All questions carry equal marks

[1x10 =10]

1. Which of the following is a key purpose of using shipping derivatives?

- A. To increase freight rates
- B. To hedge against freight rate volatility
- C. To reduce shipping capacity
- D. To manage port congestion

2. The most commonly traded shipping derivative is the:

- A. Forward Freight Agreement (FFA)
- B. Freight Charter Option
- C. Shipbuilding Contract
- D. Bunker Fuel Swap

3. What is the underlying asset in a Forward Freight Agreement (FFA)?

- A. Physical vessel
- B. Freight rate index
- C. Cargo volume
- D. Bunker fuel price

4. Which exchange provides benchmark freight indices for FFAs?

- A. London Metal Exchange (LME)

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- B. Baltic Exchange
 - C. New York Mercantile Exchange (NYMEX)
 - D. Singapore Exchange (SGX)

5. A shipowner sells an FFA at \$15,000/day for 3 months. The actual spot rate averages \$10,000/day. The shipowner's FFA position results in:

- A. Loss
- B. Gain
- C. No effect
- D. Increased exposure

6. Which of the following is NOT a type of risk in shipping?

- A. Freight rate risk
- B. Bunker price risk
- C. Interest rate risk
- D. Marketing risk

7. Which financial instrument is used to hedge bunker (fuel) price fluctuations?

- A. Freight swap
- B. FFA
- C. Bunker swap
- D. Cargo option

8. In risk management, "hedging" means:

- A. Taking speculative positions for profit
- B. Eliminating all risks
- C. Reducing exposure to adverse price movements
- D. Increasing leverage in the market

9. If a charterer buys an FFA contract, they are:

- A. Hedging against rising freight rates
- B. Speculating on falling rates
- C. Hedging against falling freight rates
- D. Engaging in physical chartering

10. Which of the following best describes "basis risk" in FFAs?

- A. The risk of counterparty default
- B. The difference between spot and futures prices
- C. The mismatch between the FFA index and actual voyage route
- D. The time lag between contract settlement and delivery

SECTION B: Answer any five question

All questions carry equal marks

[5x2] = 10 Marks

11. How do financial derivatives help in risk management in shipping?
12. What are the risks associated with using freight derivatives?
13. Name the different types of shipping derivatives instrument use in shipping
14. Define Forward contract and future contract
15. What is a clearing house in future and option contract?

SECTION C: Answer any 5 questions

[5x8=40 Marks]

All questions carry equal marks

16. Traditional risk management strategies in shipping are generally conservative, experience-based, and focused on reducing exposure - Explain.
17. What is a FFA? Explain key features of FFA
18. Consider a ship owner who is looking to protect the company against a possible decrease of the freight rates. To this extent the company sells an FFA contract for his panamax ship based on time chartering, with trade date T1=6 months (1/2 year), contract price \$18500/day, 6 settlement periods, where every settlement period has length of 1 month and with first settlement at 31st January 2022 (Use calendar date for each month). Assume the settlement price of each month as follows: Jan-\$15000, Feb-\$20000, Mar-\$19000, Apr-\$18500, May-\$16000, Jun-\$20500. Calculate whether the FFA is profitable to ship owner.
19. Make a comparison table on the basis of "type of contract", "obligation", "settlement" and "purpose" between FFA, Freight option and Freight swap.
20. Who all are the Participants in Derivatives Markets and explain their role in market

21. Define Asian Option and Barrier Options. Explain the key features of Asian option.
Why Use Barrier Options?

22. Explain with a simple calculation, how a FFA is settled.