



UNIVERSITI KUALA LUMPUR
Malaysian Institute of Marine Engineering Technology

FINAL EXAMINATION
JULY 2025 SEMESTER SESSION

SUBJECT CODE	: LMD26803
SUBJECT TITLE	: MARINE STEAM AND GAS TURBINE PLANT
PROGRAMME NAME (FOR MPU: PROGRAMME LEVEL)	: DIPLOMA OF ENGINEERING TECHNOLOGY IN MARINE ENGINEERING
TIME / DURATION	: 2.00 PM - 5.00 PM (3 HOURS)
DATE	: 17 DECEMBER 2025

INSTRUCTIONS TO CANDIDATES

1. Please read **CAREFULLY** the instructions given in the question paper.
 2. This question paper has information printed on both sides of the paper.
 3. This question paper consists of **TWO (2)** sections; Section A and Section B.
 4. Answer **ALL** question in Section A, and **TWO (2)** questions in Section B.
 5. Please write your answers on this answer booklet provided.
 6. Answer **ALL** questions in English language **ONLY**.
 7. Answer should be written in blue or black ink except for sketching, graphic and illustration.
 8. Steam Table of Properties attached for your reference.
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THERE ARE 2 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

SECTION A (Total: 60 marks)

**INSTRUCTION: Answer ALL questions.
Please use the answer booklet provided.**

Question 1

With reference to the marine steam boiler:

- a) Sketch a cross-sectional view of the ESD II boiler and label TEN (10) major components. (15 marks)
- b) Based on your sketch in (a), show the flow direction of water and steam. (5 marks)

Question 2

With reference to lubricating oil system for marine steam turbine engines.

- a) Sketch the lubrication system with SIXTEEN (16) components. (15 Marks)
- b) Explain the operation of the lubrication system (5 Marks)

Question 3

With reference to the main steam turbine engine onboard steam ship,

- a) Sketch with TWELVE (12) suitable labels of main steam turbine construction (10 Marks)
- b) Explain the operation of main steam turbine as propulsion engine. (10 Marks)

SECTION B (Total: 40 marks)

INSTRUCTION: Answer only TWO (2) questions.

Please use the answer booklet provided.

Question 4

With reference to marine gas turbine engine (GTE)

- a) Sketch and label FOUR (4) main components of gas turbine engine (GTE) (10 marks)
- b) Explain the operation of gas turbine (GTE) on board Navy vessel. (10 marks)

Question 5

With reference to the main condenser of steam propulsion onboard LNG vessel.

- a) Sketch a regenerative condenser with correct main components (10 Marks)
- b) Explain the operation of main condenser. (10 Marks)

Question 6

With reference to marine boiler feed water treatment system:

- a) States any FOUR (4) tests of boiler water treatment (12 Marks)
- b) Identify FOUR (4) objectives to carry out boiler water treatment (8 Marks)

END OF EXAMINATION PAPER