



**UNIVERSITI KUALA LUMPUR**  
**Malaysian Institute of Marine Engineering Technology**

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**FINAL EXAMINATION**  
**FEBRUARY 2025 SEMESTER SESSION**

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**SUBJECT CODE** : LMD25403

**SUBJECT TITLE** : MARINE PROPULSION STEAM TURBINE

**PROGRAMME NAME** : DIPLOMA OF ENGINEERING TECHNOLOGY IN  
(FOR MPU: PROGRAMME LEVEL) MARINE ENGINEERING

**TIME / DURATION** : 09.00 AM - 11.30 AM  
(2 HOURS 30 MINUTES)

**DATE** : 3 JULY 2025

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**INSTRUCTIONS TO CANDIDATES**

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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 5 PAGES OF QUESTIONS, INCLUDING THIS PAGE.**

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**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) States FOUR (4) components of steam cycle (4 marks)
- b) Sketch and labels FIVE (5) for Curtis stage arrangement including related line graph (10 marks)
- c) Explain on each arrangement of steam turbine type below: (6 Marks)
  - I. Parson
  - II. Curtis
  - III. Rateau

**Question 2**

With reference to ship's boiler feed water and level control system:

- a) Sketch and labels SIX (6) for boiler water level control system (12 marks)
- b) Explain swelling and shrinking effects on boiler water level (8 marks)

**Question 3**

With reference to the marine boiler feed and water treatment system:

- a) Determine any SIX (6) purposes of carrying out regular water treatment and analysis: (6 marks)
- b) Sketch and label FOURTEEN (14) for closed type feed water system (14 marks)

**SECTION B (Total: 40 marks)****INSTRUCTION: Answer only TWO questions.****Please use the answer booklet provided.****Question 4**

With reference to the marine boiler mountings and accessories:

(a) Sketch and labels SIX (6) full bore safety valve. (12 marks)

(b) Explain FOUR (4) operation of the safety valve stated in 4(a). (8 marks)

**Question 5**

With reference to the fuel oil supply system for marine steam turbines:

(a) Sketch and labels FIVE (5) boiler fuel oil supply system. (10 marks)

(b) Explain any FIVE (5) operation of the fuel oil system in 5(a) (10 marks)

**Question 6**

With reference to the marine steam plant lubrication system:

- (a) State THREE (3) type of steam turbine lubrication system (3 marks)
- (b) Describe any SEVEN (7) concept of boundary lubrication (14 marks)
- (c) State THREE (3) functions of lubrication for steam turbine system (3 marks)

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**END OF EXAMINATION PAPER**

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