



**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** : LED22703

**SUBJECT TITLE** : SHIPBOARD ELECTRICAL AUXILIARY EQUIPMENT

**PROGRAMME NAME** : DET IN MARINE ELECTRICAL AND ELECTRONICS  
(FOR MPU: PROGRAMME LEVEL)

**TIME / DURATION** : 09.00 AM - 12.00 PM  
(3 HOURS)

**DATE** : 2 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 **ONLY** in Section B.
  5. Please write your answers on this answer booklet provided.
  6. Answer **ALL** questions in English language **ONLY**.
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**THERE ARE 2PAGES OF QUESTIONS, EXCLUDING 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 Galley Equipment:

- (a) State **SIX (6)** types of cooking appliances onboard. (6 marks)
- (a) Describe **SIX (6)** types of cooking appliances onboard as in Question 1(a). (12 marks)
- (a) State **TWO (2)** types of refrigeration equipment onboard. (2 marks)

**Question 2**

With reference to Laundry Equipment:

- (a) State **SIX (6)** types of laundry equipment onboard. (6 marks)
- (a) Describe **SIX (6)** types of laundry equipment onboard as in Question 2(a). (12 marks)
- (a) State **TWO (2)** types of maintenances for laundry equipment. (2 marks)

**Question 3**

With reference to Hotel Lighting System on a Ship:

- (a) State **THREE (3)** types of lighting fixtures and **THREE (3)** control system components of hotel lighting system. (6 marks)
- (b) Describe **THREE (3)** types of lighting fixtures and **THREE (3)** control system components of hotel lighting system in Question 3(a). (12 marks)
- (c) State **TWO (2)** types of energy efficient components of hotel lighting system. (2 marks)

**SECTION B (Total: 40 marks)**

**INSTRUCTION: Answer only TWO (2) questions.**

**Please use the answer booklet provided.**

**Question 4**

With reference to Elevator:

- (a) Construct a conventional electrical control circuit diagram for a two-level elevator that used a motor electric to pull up and lower down the elevator car. Ignores the door from the control circuit. (10 marks)
- (a) Construct a LADDER diagram for the system in Question 4(a) which using programmable logic controller as automated monitoring control. (10 marks)

**Question 5**

With reference to Hotel Safety System:

- (a) Construct a basic heat detection alarm system's wiring diagram that using programmable logic controller as detection controller at five locations. (10 marks)
- (a) Construct the LADDER diagram for the system in Question 5(a). (10 marks)

**Question 6**

With reference to Hotel Lighting System on a Ship:

- (a) Construct a control circuit diagram to control five lamps at a five levels staircase using manual two-way switches and intermediate switches. (10 marks)
- (b) Construct a LADDER diagram of PLC to control three lamps to switch ON in sequence using timers on delay equal to 3 second each. Please include STOP button. (10 marks)

**END OF EXAMINATION PAPER**