



UNIVERSITI KUALA LUMPUR
Malaysian Institute of Marine Engineering Technology

FINAL EXAMINATION
JULY 2025 SEMESTER SESSION

SUBJECT CODE : LED22203

SUBJECT TITLE : SHIP ELECTRICAL POWER SYSTEM

PROGRAMME NAME : DIPLOMA OF ENGINEERING TECHNOLOGY IN
(FOR MPU: PROGRAMME LEVEL) ELECTRICAL AND ELECTRONICS (MARINE)

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

DATE : 17 DECEMBER 2025

INSTRUCTIONS TO CANDIDATES

1. Please **CAREFULLY** read the instructions given in the question paper.
 2. This question paper has information printed on both sides of the paper.
 3. This questions paper consists of **TWO (2) Sections**; Section A and Section B.
 4. Answer **ALL** questions in Section A. For Section B, answer **TWO (2)** questions **ONLY**.
 5. Please write your answers on the 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.
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THERE ARE 3 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 Electrical Power Distribution Boards and Electrical Equipment:

- (a) State **SIX (6)** parameters for shipboard electrical equipment. (6 marks)
- (b) Describe **SIX (6)** parameters as in Question 1(a). (12 marks)
- (c) State **TWO (2)** consequences of short circuits in electrical equipment. (2 marks)

Question 2

With reference to Power Distribution Boards:

- (a) Explain **THREE (3)** features of the distribution boards. (6 marks)
- (b) Explain **THREE (3)** features of the branch circuits. (6 marks)
- (c) Draw the three phase AC earthed neutral system diagram. (8 marks)

Question 3

With reference to Power Distribution Boards:

- (a) State **SIX (6)** components of a steel-enclosed main switchboard. (6 marks)
- (b) Describe **SIX (6)** components of a steel-enclosed main switchboard in Question 3(a). (12 marks)
- (c) State **TWO (2)** types of protective devices selectivity. (2 marks)

SECTION B (Total: 40 marks)

INSTRUCTION: Answer only TWO (2) questions.

Please use the answer booklet provided.

Question 4

With reference to Electrical Devices for Power Distribution & Cables:

- (a) Describe **THREE (3)** characteristics of slow-blowing circuit breaker. (6 marks)
- (b) Describe **TWO (2)** applications of slow-blowing circuit breaker. (4 marks)
- (c) Construct a circuit diagram of a power transformer connections to the busbar of a three phase 440V, 50Hz and a three phase 220V, 50Hz in Delta-Delta connection. (10 marks)

Question 5

With reference to Coupling, Load Sharing and Changing Over Generators:

- (a) Describe **FIVE (5)** electrical protections for generator. (10 marks)
- (b) Explain **FIVE (5)** main process of parallel running operation for generators by referring the flowchart structure in Figure 1. (10 marks)

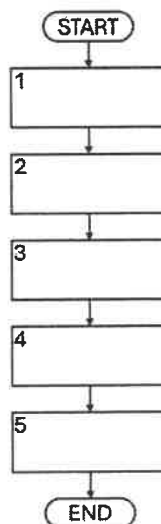


Figure 1

Question 6

With reference to Coupling and Breaking Connection Between Switchboards and Distribution Panels:

- (a) Describe the preparation, connection, and switching process of the change-over procedure. (10 marks)
- (b) Describe **TWO (2)** purposes of emergency switchboard. (4 marks)
- (c) Describe **THREE (3)** types of connections between main and emergency switchboards. (6 marks)

END OF EXAMINATION PAPER

