



UNIVERSITI KUALA LUMPUR
Malaysian Institute of Marine Engineering Technology

FINAL EXAMINATION
OCTOBER 2025 SEMESTER SESSION

SUBJECT CODE	: LGB22203
SUBJECT TITLE	: SHIP MATERIALS
PROGRAMME NAME (FOR MPU: PROGRAMME LEVEL)	: BACHELOR OF ENGINEERING TECHNOLOGY (NAVAL ARCHITECTURE AND SHIPBUILDING) WITH HONOURS
TIME / DURATION	: 9.00 AM - 12.00 PM (3 HOURS)
DATE	: 29 JANUARY 2026

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 **ONLY ONE (1)** section with FIVE (5) questions
 4. Answer **FOUR (4)** 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 4 PRINTED PAGES, INCLUDING THIS COVER PAGE.

SECTION A (Total: 100 marks)**INSTRUCTION: Answer FOUR (4) questions ONLY.****Please use the answer booklet provided.****Question 1**

It is known that materials can be categorised into 5 which are metallic, composite, polymeric, ceramic and electronics material

(a) In your own words, briefly discuss what is the **Metallic Materials**
(6 Marks)

(b) Differentiate the common properties of **Polymeric** and **Composite Materials**
(19 Marks)

Question 2

Iron and steel plays major as main construction materials in the offshore other marine structure.

(a) Pig iron from the blast furnace usually transferred in the liquid state to a steelmaking furnace. Briefly discuss what is the steel making process and its chemistry reaction.
(10 Marks)

(b) Apart from steel, aluminium also is heavily used in the industry. Discuss the process of joining of aluminium and steel and its importance
(15 Marks)

Question 3

Creep Test is also widely used in determining the strength of the material in heat environment.

- (a) Discuss what creep test and its importance

(10 Marks)

- (b) With the aid of a diagram, briefly explain the 3 stages of creep curve regions

(15 Marks)

Question 4

- (a) One of the most mechanical testing to determine the materials properties is tensile test. Please briefly discuss its testing methods' steps.

(5 Marks)

- (b) Small defect on any materials and structures can be determine using the Magnetic Particle Testing. Briefly discuss its advantages and disadvantages

(20 Marks)

Question 5

Aluminium is widely known as an importance material in ship construction

(a) Discuss the advantages of Aluminium in ship construction

(10 Marks)

(b) Briefly discuss the importance to undersand the joining process of Aluminium

(15 Marks)

END OF QUESTION PAPER

