CONFIDENTIAL

UNIVERSITI KUALA LUMPUR
Malaysian Institute of Marine Engineering Technology

FINAL EXAMINATION

JULY 2025 SEMESTER SESSION

SUBJECT CODE	:	**LMB30903**
SUBJECT TITLE	:	**MARINE DIESEL ENGINE 2**
PROGRAMME NAME (FOR MPU: PROGRAMME LEVEL)	:	**BACHELOR OF MARINE ENGINEERING TECHNOLOGY WITH HONOURS**
TIME / DURATION	:	**09.00 AM - 11.30 AM (2 HOURS 30 MINUTES)**
DATE	:	**24 JUNE 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 **ONE (1)** section **ONLY**.
4. Consist of FIVE (5) questions. Answer **FOUR (4)** questions in **ONLY**.
5. Please write your answers on this answer booklet provided.
6. Answer **ALL** questions in English language **ONLY**.

THERE ARE 3 PAGES OF QUESTIONS, INCLUDING THIS PAGE.

INSTRUCTION: Answer FOUR (4) questions. **(Total: 100 marks)**

Please use the answer booklet provided.

QUESTION 1

With reference to Marine 2-Stroke Engine Bedplate:

a) Sketch and label the top view of a double transverse girder bedplate.

(5 marks)

b) Elaborate your sketch in (a)

(5 marks)

c) Discuss the following requirements in the construction of a bedplate.

(10 marks)

d) Sketch a front view of a fabricated bedplate and indicate the potential areas where cracks are most likely to develop

(5 marks)

QUESTION 2

With reference to Marine 2-stroke engine cylinder liner:

a) Explain abrasion in the cylinder liner of a marine diesel engine and describe its effects on engine performance

(6 marks)

b) Explain the term "*scuffing*" as it occurs in the cylinder liner of a marine diesel engine

(4 marks)

c) Explain FOUR (4) causes of "scuffing".

(10 marks)

d) Sketch and label cloverleafing pattern in cylinder liner.

(5 marks)

QUESTION 3

With reference to engine exhaust valve:

a) Sketch and label the hydraulic operated air-spring exhaust valve system.

(15 marks)

b) Discuss the operating sequence of "*opening the exhaust valve*"

(10 marks)

QUESTION 4

With reference to marine engine crankshaft:

a) State FOUR (4) types of crankshaft failure

(4 marks)

b) Explain FIVE (5) components of ship crankshaft.

(5 marks)

c) Discuss FOUR (4) process of constructing a semi-build crankshaft.

(10 marks)

d) Sketch and label semi-build crankshaft

(6 marks)

QUESTION 5

With reference to marine engine components manufacturing:

a) State 3 common methods of manufacturing components

(3 marks)

b) With the aid of sketching, discuss the process of sand casting

(18 marks)

c) Discuss TWO (2) advantages of welding method to produce an A-frame.

(4 marks)

END OF EXAMINATION PAPER