



UNIVERSITI KUALA LUMPUR
Malaysian Institute of Marine Engineering Technology

FINAL EXAMINATION
JANUARY 2016 SESSION

SUBJECT CODE : LDD 20203
SUBJECT TITLE : MARINE ENGINEERING SYSTEM I
LEVEL : DIPLOMA
DATE :
TIME :
DURATION : 3 HOURS

INSTRUCTIONS TO CANDIDATES

1. Please read the instructions given in the question paper **CAREFULLY**.
 2. This question paper is printed on both sides of the paper.
 3. Please write your answers on the answer booklet provided.
 4. Answer should be written in blue or black ink except for sketching, graphic and illustration.
 5. This question paper consists of **TWO (2)** sections; Section A and B. Answer all questions in Section A. For Section B, answer **TWO (2)** questions only.
 6. Answer all questions in English.
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THERE ARE 4 PAGES OF QUESTIONS, INCLUDING THIS PAGE.

SECTION A (Total: 60 marks)

INSTRUCTION: Answer ALL questions.

Please use the answer booklet provided.

QUESTION 1

- (a) Briefly explain about marine diesel engines. (4 Marks)
- (b) Describe the comparison of two stroke and four stroke diesel engines. (8 Marks)
- (c) With the aid of a sketch, briefly explain the working principle of two stroke engine. (8 Marks)

QUESTION 2

- (a) Define steam. (2 Marks)
- (b) Sketch the stage of the steam engine system. (4 Marks)
- (c) Sketch and briefly explain the generation stage system. (6 Marks)
- (d) Sketch and briefly explain two types of boilers. (8 Marks)

Question 3

- (a) A gas turbine, also called a combustion turbine, is a type of internal combustion engine. It has an upstream rotating compressor coupled to a downstream turbine, and a combustion chamber in between. Define marine gas turbines. (6 Marks)
- (b) Sketch the schematic diagram of Gas Turbine Engine. (10 Marks)
- (c) Sketch P-v diagram (ideal Brayton cycle) (4 Marks)

SECTION B (Total: 40 marks)

INSTRUCTION: Answer only TWO questions.

Please use the answer booklet provided.

QUESTION 4

(a) Pumps can be classified into three major groups according to the method they use to move the fluid which is direct lift, displacement, and gravity pumps. Define pumps.

(2 Marks)

(b) The pumps could divide into several types according their functions. Briefly explains the positive displacement pumps

(4 Marks)

(c) Describe the functions of check valve

(4 Marks)

(d) Sketch a gate valve with the description of components

(10 Marks)

QUESTION 5

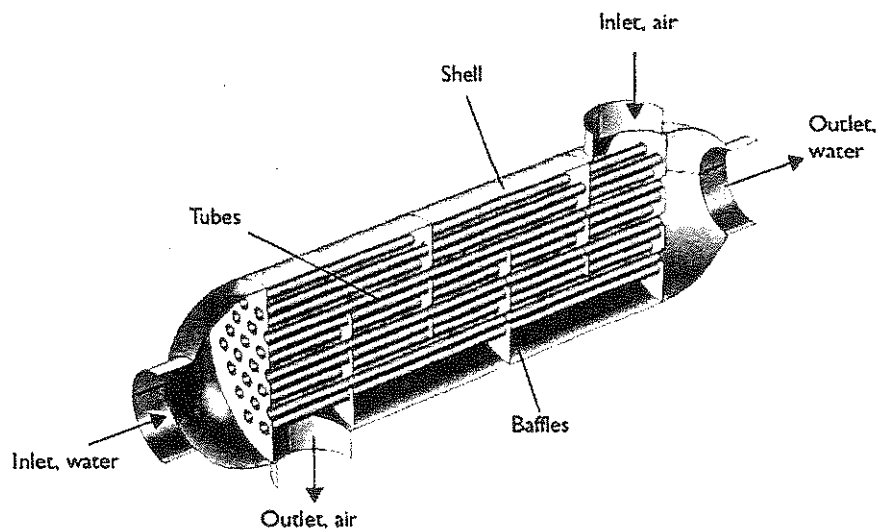


Figure 1: Component A

(a) Briefly describes the function of component A as shown in figure 1

(4 Marks)

(b) List down three (3) transfer modes of component A

(6 Marks)

(c) With the aid of a sketch, explain about boundary layer

(10 Marks)

QUESTION 6

(a) State the first law of thermodynamics.

(2 Marks)

(b) Explain 3 elements a of thermodynamics cycle

(9 Marks)

(c) Draw P-v diagram Otto cycle-spark ignition engine

(9 Marks)

END OF QUESTION

