



UNIVERSITI KUALA LUMPUR
MALAYSIA FRANCE INSTITUTE

FINAL EXAMINATION
JANUARY 2011 SEMESTER

SUBJECT CODE : FVD11103/FVD 10103
SUBJECT TITLE : ENGINE FUNDAMENTAL
LEVEL : DIPLOMA
DURATION : 8.00pm – 10.00pm
(2 hours)
DATE / TIME : 09 MAY 2011

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 3 PRINTED PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

SECTION A (Total: 65 marks)

**INSTRUCTION: Answer ALL questions.
Please use the answer booklet provide.**

ANSWER ALL THE QUESTION

Question 1

Introduction to Engine Fundamental

- a) What is an engine? (2marks)

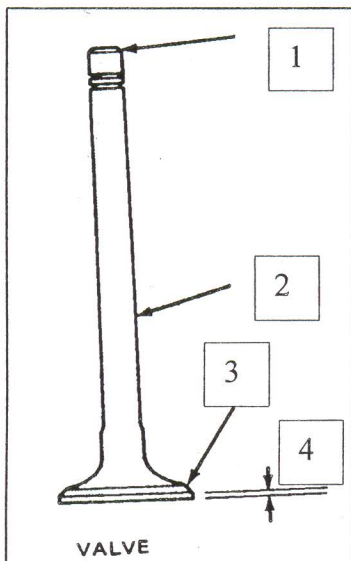
- b) Name the FOUR basics system in the engine. (4 marks)

- c) Describe:
 - i. Spark ignition engine
 - ii. Compression ignition engine
 - iii. External compression engine
 - iv. Internal compression engine(4 marks)

Question 2

Engine construction

- a) Give the specific name of parts in the figure 1 below:



(4 marks)

- b) Name FIVE parts attach to the cylinder block. (5 marks)
- c) There are four basic valve arrangement (head), I, L, T and F, you are ask to describe about arrangement of I and L (sketch is advisable). (5 marks)
- d) Name the TWO function of each parts below:
- i. Camshaft
 - ii. Connecting rod (con rod)
 - iii. Compression ring (piston ring)
- (6 marks)

Question 3

Engine operation

- a) In a **four stroke** engine, how many degree of **crankshaft** and **camshaft** need to be completed in one complete cycle? (4 marks)
- b) What happen during Intake stroke in the four stroke Diesel engine? (5 marks)
- c) Give **THREE** differences between two stroke diesel engine and two stroke petrol engine. (6 marks)

Question 4

Engine system

- a) Name **FIVE** functions of the lubrication system in automotive engine (5 marks)
- b) What are (**THREE**) the functions of ignition system? (3 marks)
- c) Draw the full circuit of ignition system and differentiate between low and high volts (primary & secondary circuits). (7 marks)
- d) What are (**THREE**) the functions of cooling system? (3 marks)
- e) The function of thermostat is ... (2 marks)

SECTION B (Total: 35 marks)

INSTRUCTION: Answer TWO (2) questions only and question one (1) is compulsory.

Please use the answer booklet provided.

Question 1

Explain the operation of four stroke cycle of petrol engine (sketch is advisable).

(20 marks)

Question 2

Explain the operation of two stroke cycle of petrol engine (sketch is advisable).

(15 marks)

Question 3

*A customer ask **your advice about** a car problem, he is interested about engine "over-heat".*

You are asking to explain the meaning of over-heat and give example and the symptom (each part) of how over-heat can be happened when...

(15 marks)

END OF QUESTION