



UNIVERSITI KUALA LUMPUR
Malaysia France Institute

FINAL EXAMINATION
JANUARY 2014 SESSION

SUBJECT CODE : FVD 11103
SUBJECT TITLE : ENGINE FUNDAMENTAL
LEVEL : DIPLOMA
TIME / DURATION : 2 hours and 30 minutes.
DATE :

INSTRUCTIONS TO CANDIDATES

1. Please read the instructions given in the question paper CAREFULLY.
 2. This question paper is printed only one side of the paper.
 1. Please write your answers on the answer booklet provided.
 2. Answer should be written in blue or black ink.
 3. This question paper consists of TWO (2) sections. Section A and B.
 4. Answer all questions in Section A and 2 questions in Section B only.
 5. Answer all questions in English.
 6. All questions are closed type question. Please return it back to the invigilator
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THERE ARE 2 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

SECTION A (Total: 60 marks)**INSTRUCTION: Answer All question.****Question 1**

- a) Explain what is an engine? (2 marks)
- b) Describe **THREE (3)** ways of driving the engine camshaft. (3 marks)
- c) List **SIX (6)** components attached to cylinder block. (3 marks)
- d) Name the **THREE (3)** basic cylinder arrangements for automotive engine. (3 marks)
- e) Explain the difference between internal combustion engine over external combustion engine in construction and purpose of each. (4 marks)

Question 2

- a) Describe the short block. (2 marks)
- b) Describe the reciprocating engine and the rotary engine. (4 marks)
- c) Explain the purposes of connecting rod. (2 marks)
- d) Name **TWO (2)** types of piston rings. (2 marks)
- e) Explain why tensioners are used with timing belt and what can happen if a belt jumps. (5 marks)

Question 3

- a) Explain the operation of the compression stroke and exhaust stroke. (6 marks)
- b) Describe the meaning of valve over-lap. (2 marks)
- c) Define the differences of the pre combustion chamber and main combustion chamber. (4marks)
- d) Name **THREE (3)** functions of camshaft. (3 marks)

Question 4

- a) Explain the purposes of fuel system. (3marks)
- b) Describe **SIX (6)** function of lubrication system. (3marks)
- c) Describe **EIGHT (8)** properties needed by lubricating engine oil. (4marks)
- d) Sketch the diagram of conventional ignition system and name the part. (5marks)

SECTION B (Total: 40 marks)**Answer 2 questions only****Question 1**Describe **FIVE (5)** causes of a car breakdown and how to solve each case.*(20marks)***Question 2**a) Explain **THREE (3)** methods of valve adjustment in detail.*(15 marks)*

b) Name the most popular method and explain why.

*(5 marks)***Question 3**

a) Sketch the valve timing diagram and show the overlap region.

(10 marks)

b) A customer complained that, after engine overheats, his engine did not run smooth and the engine oil was not the “black”. It became “brown” and sticky. As a technician state the possible causes for this problem and explain the process to solve it.

*(10 marks)***END OF QUESTION**