



**UNIVERSITI KUALA LUMPUR**  
**MALAYSIA FRANCE INSTITUTE**

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**FINAL EXAMINATION**  
**JANUARY 2014 SEMESTER**

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**SUBJECT CODE** : FVB 11704  
**SUBJECT TITLE** : PETROL ENGINE TECHNOLOGY  
**LEVEL** : BACHELOR  
**DURATION** : 2 HOURS  
**DATE / TIME** :

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**INSTRUCTIONS TO CANDIDATES**

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1. Please read the instructions given in the question paper **CAREFULLY**.
  2. This question paper is printed on one side of the paper.
  3. Please write your answers in the answers booklet provided.
  4. Answers should be written in blue or black ink except for sketching, graphic and illustration.
  5. This question paper consists of **ONE (1)** section. Answer 4 questions only.
  6. Answer all questions in English.
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**THERE ARE 12 PRINTED PAGES OF QUESTIONS.**

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**SECTION A (Total: 100 marks)****INSTRUCTION : Answer 4 question only.****Please answer on question paper.****Question 1**

- a) i ) Explain the engine friction  
ii) Describe **TWO (2)** types of engine friction. (10 marks)
- b) Explain about engine torque and the different torque between two valves and four valves in 3000rpm. (10 marks)
- c) Explain about volumetric efficiency and three ways to improve it. (5 marks)

**Question 2**

- a) Justify the terminology as follow:  
1. Crank throw  
2. Over square engine  
3. Under square engine  
4. Cylinder bore oval  
5. Cylinder bore tapered (10 marks)
- b) Explain about volumetric efficiency and three way to improve it. (10 marks)
- c) Explain about “octane rating” between RON 97 and RON 95. (5 marks)

**Question 3**

- a) Explain the function of cooling system and name **FIVE (5)** components available in the system. (10 marks)
- b) With the help of cooling system diagram, explain the operation of cooling system. (10 marks)
- c) List **FIVE (5)** component in the fuel carburetor system. (5 marks)

**Question 4**

- a) Explain what the function of fuel injection system and list **FIVE (5)** components available in the system. (10 marks)
- b) Predict what are the consequences if the fuel pressure in the fuel injection system line is decreased. (10 marks)
- c) State **FIVE (5)** differences between Normal Aspirated and Forced Induction system. (5 marks)

**Question 5**

Customer complained that his engine consumed engine oil and produced blue smoke, from the complaint, please give a possible reason, justify the cause by using compression test result (dry & wet) and give solution to solve the complaint.

(25 marks)

**END OF QUESTION**