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**UNIVERSITI KUALA LUMPUR**  
**Malaysia France Institute**

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**FINAL EXAMINATION**  
**JANUARY 2011 SESSION**

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**SUBJECT CODE** : FVB 30703  
**SUBJECT TITLE** : ALTERNATIVE FUEL VEHICLE  
**LEVEL** : BACHELOR  
**TIME / DURATION** : 9.00 am – 11.00 pm  
( 2 HOURS )  
**DATE** : 08 MAY 2011

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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 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) question only.
  6. Answer all questions in English.
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**THERE ARE 4 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.**

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**SECTION A (Total: 60 marks)**

**INSTRUCTION: Answer all the question.**  
**Please use the answer booklet provided.**

**Question 1**

- a) List five advantages of using CNG as a transportation fuel compared to Liquefied Petroleum Gas(LPG). (5 marks)
- b) State FIVE information which is displayed on the cylinder. (5 marks)
- c) Why is the Compressed Natural Gas need to be odorized? (2 marks)

**Question 2**

- (a) The CNG fuel control equipment includes all the necessary components' to convert CNG at high pressure to the CNG air mixture for supply to the engine. List down EIGHT CNG fuel control equipments. (8 marks)
- (b) Explain the function of any **FIVE** of the components above. (5 marks)
- (c) State **FIVE** considerations to be taken when installing the regulator. (2 marks)

**Question 3**

- (a) Explain how does the safety feature works if the gas pressure in the NGV cylinder increases more than the predetermined safe level. (3 marks)
- (b) As a qualified installer, how would you determine that the position of the NGV Filler Valve is in compliant with the MS:1096 – 2011 Standard. (8 marks)

**Question 4**

- a) Explain the importance of having a post-conversion check on the vehicles that have been installed with NGV equipment. (6 marks)
- b) Give **THREE** (3) probable causes of each of the following phenomena:
- i. Engine can be started on NGV, but not on Petrol
  - ii. Engine runs on petrol but dies when switched to NGV
  - iii. Engine runs on CNG but hesitates on acceleration
- (9 marks)
- (c) List **FOUR** factors need to be considered in determining the location of NGV Cylinder. (8 marks)

