



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

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

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**SUBJECT CODE** : FVD 10203  
**SUBJECT TITLE** : CHASSIS AND BRAKING SYSTEM 1  
**LEVEL** : DIPLOMA  
**DURATION** : 3.30pm – 5.30pm  
( 2 HOURS )  
**DATE / TIME** : 07 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 **FOUR (4)** questions. Answer **ALL** questions.
  6. Answer all questions in English.
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**THERE ARE 2 PRINTED PAGES OF QUESTIONS, EXCLUDING THIS PAGE.**

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**SECTION A (Total: 100 marks)**

**INSTRUCTION: Answer ALL questions.**  
**Please answer inside question booklet.**

**Question 1**

- (a) List **five** important requirements for STEERING BEHAVIOR (10 marks)
- (b) Explain the operation of Recirculating-Ball Steering Gear (5 marks)
- (c) With appropriate explanation, describe variable-ratio steering for steering system (4 marks)
- (d) A Case: The driver complained when he was driving, the vehicle tend to drift from one side of road to the other. This is called wander. List SIX common problems in terms of wander. (6 marks)

**Question 2**

- (c) List down and describe 3 types of shock absorber other than gas-filled shock absorber and hydraulic shock. (6 marks)
- (b) What is the purpose of anti-roll bar? Describe the effect of handling when the vehicle is not equipped with a stabilizer bar. (6 marks)
- (c) With a suitable illustration, explain dual braking system. (5 marks)
- (d) The driver complained that when he was braking, the vehicle has less braking efficiency. This problem called braking grab.
- i. What are the possible causes of this problem? (4 marks)
- ii. What are the necessary corrections that should be taken in order to solve the problems (i) above? (4 marks)

**Question 3**

- (a) Explain in detail the procedure to perform wheel alignment adjustment for Proton Wira 1.6 XLi by using John Bean Aligner Machine. (10 marks)
- (b) Describe electronically control suspension (6 marks)
- (c) List **two** basic designs for coil spring and make comparison between these spring types (5 marks)
- (d) Explain these term :-  
1. Toe  
2. Camber  
3. Caster (6 marks)

**Question 4**

- (a) List **five** components in front suspension which are available for servicing (5 marks)
- (b) What is the cause of pedal pulsations for a disc brake system? (6 marks)
- (c) Translate this matrix tire sizes code: **P 185/55 R 18 Z 98**  
(4 marks)
- (d) List two common types of brake bleeding processes and explain one of the bleeding techniques. (10 marks)

**END OF QUESTIONS**