



**UNIVERSITI KUALA LUMPUR
MALAYSIA FRANCE INSTITUTE**

**FINAL EXAMINATION
SEPTEMBER 2013 SESSION**

SUBJECT CODE : FVD 12403
SUBJECT TITLE : CHASSIS AND BRAKING SYSTEM 1
LEVEL : DIPLOMA
TIME/DURATION : / 2 HOUR
DATE :

INSTRUCTIONS TO CANDIDATES

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 TWO (2) section. Section A and B. Answer all questions in Section A and 2 question in section B.
 6. Answer all questions in English.
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THERE ARE 4 PRINTED PAGES OF QUESTIONS EXCLUDING THIS PAGE.

SECTION A (Total: 60 marks)**INSTRUCTION: Answer ALL question in section A****Please answer inside question booklet.****Question 1**

- (a) List down and describe THREE (3) types of shock absorber other than gas-filled shock absorber and hydraulic shock. **(6marks)**
- (b) What is the purpose of anti-roll bar? Describe the effect of handling when the vehicle is not equipped with a stabilizer bar. **(6marks)**
- (c) 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? **(4marks)**
- ii. What are the necessary corrections that should be taken in order to solve the problems (i) above? **(4marks)**

Question 2

- (a) Explain the operation of Recirculating-Ball Steering Gear **(5marks)**
- (b) With appropriate explanation, describe variable-ratio steering for steering system **(4marks)**
- (c) With a suitable illustration, explain dual braking system. **(5marks)**
- (d) What is the cause of pedal pulsations for a disc brake system? **(6marks)**

Question 3

- (a) List TWO (2) basic designs for coil spring and make comparison between these spring types (5marks)
- (a) List FIVE (5) components in front suspension which are available for servicing (5marks)
- (b) Draw a picture of positive Chamber when it is viewed from front of the vehicle (5marks)
- (d) What is the purpose of correct toe setting on vehicle? (5marks)

SECTION B (Total: 40 marks)**Answer TWO (2) questions only****Question 1**

- (a) Explain in detail the procedure to perform wheel alignment adjustment for Proton Wira 1.6 XLi by using John Bean Aligner Machine. **(10marks)**
- (b) Explain these terms: **(6marks)**
1. Toe
 2. Camber
 3. Caster
- (c) What will be the cause if incorrect chamber **(4marks)**

Question 2

- (a) List TWO (2) common types of brake bleeding processes and explain one of the bleeding techniques. **(10marks)**
- (b) Describe electronically control suspension **(5marks)**
- (c) Why Rack and pinion steering gear are very popular today **(5marks)**

Question 3

- (a) List FIVE (5) important requirements for **STEERING BEHAVIOR** **(10marks)**
- (b) 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. **(6marks)**
- (c) Translate this matrix tire sizes code: **P 185/55 R 18 Z 98** **(4marks)**

END OF QUESTIONS