



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

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

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**SUBJECT CODE** : FVD 30502  
**SUBJECT TITLE** : VEHICLE SERVICE AND MAINTENANCE  
**LEVEL** : DIPLOMA  
**DURATION** : 3.30pm – 5.30pm  
( 2 HOURS )  
**DATE / TIME** : 05 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 one (1) question only.
6. Answer all questions in English.

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THERE ARE 4 PRINTED PAGES OF QUESTIONS EXCLUDING THIS PAGE.

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**SECTION A (Total: 75 marks)****INSTRUCTION: Answer ALL questions.****Please use the answer booklet provided.****Question 1**

- (a) Elaborate two type of maintenance in detail. (4 marks)
- (b) List eight item need to be check at least twice a year involves performing certain services to a vehicle on a regularly scheduled basis, before there is any sign of failure. (8 marks)
- (c) What is engine tune-up? Describe three important procedure of engine tune-up? (4 marks)
- (d) Define this term for battery : charging, discharging and parasitic load (6 marks)
- (e) Describe how to perform 'open circuit test' for battery. (3 marks)

**Question 2**

- (a) What is the different between conventional battery, low maintenance battery and free maintenance battery? (6 marks)
- (b) Describe the procedure to perform routine cleaning for battery. (5 marks)
- (c) Translate this engine oil code:  
**API SERVICE CJ4, CI-4/SM**  
(4 marks)
- (d) What is the advantage of multi-grade engine oil?  
(4 marks)

- (e) A car with 50000 kilometer has blue smoke coming from the exhaust system. It is obviously noticeable when vehicle is in various driving condition.
- i) What are the possible causes of this problem? (2 marks)
- ii) What are the necessary corrections that should be taken in order to solve the problem? (4 marks)

### Question 3

- (a) Describe the characteristic of Automatic Transmission fluid (ATF). (4 marks)
- (b) Explain in detail how does additive in ATF protects the Automatic transmission from being damage and long lasting. (5 marks)
- (c) Explain the effect of having very low fluid viscosity in Automatic Transmission. (5 marks)
- (d) A vehicle's transmission fluid has been checked and seems to be dirty. There are no apparent driving problems. However, there is varnish or gum on dipstick.
- i. What are the two possible causes of this problem? (2 marks)
- ii. What are the necessary corrections that should be taken in order to solve the problem? (5 marks)
- (e) Describe Two type of bearing failure (4 marks)

**SECTION B (Total: 25 marks)****INSTRUCTION: Answer ONE (1) questions.****Please use the answer booklet provided.****Question 1**

- (a) List FIVE items needed for checking the Vehicle Interior. (5 marks)
- (b) List FIVE description of failure for timing belt. (5 marks)
- (c) Explain in detail how tighten the timing belt tensioner for Proton Wira 1.5 (5 marks)
- (d) What causes of coolant lost for cooling system? (5 marks)
- (e) What is the different between radial ply tire constructions compare to the others tire construction? (5 marks)

**Question 2**

- (a) List six properties of Automatic Transmission fluid (ATF). (6 marks)
- (b) 'Cycling' will effect the battery life time. Explain the symptom of 'cycling'. (4 marks)
- (c) What is the possible cause of burned bead tire due to overheated rims? (3 marks)
- (d) Explain the procedure of changing oil filter for light weight vehicle. (6 marks)
- (e) A customer with a manual transmission vehicle complains that the front tires of his vehicle are wearing unevenly and need to be replaced.
  - i. What are the possible causes of this problem?

(2 marks)

- ii. What are the necessary corrections that should be taken in order to solve the problem?

(4 marks)

**Question 3**

- (a) Tire manufacturers recommend rotating the tire every 20,000km. Draw a four and five tires rotation for bias belted ply construction. (6 marks)
- (b) Describe the procedure to change timing belt for twin camshaft engine (4G63) (10 marks)
- (c) How to diagnose failure of radiator cap for water cooling system. (3 marks)
- (d) Describe the procedure to check the level of Automatic Transmission fluid (ATF) for automatic transmission. (3 marks)
- (e) When is the suitable time to change the spark plug for spark ignition (SI) engine? (3 marks)

**END OF QUESTION**