



**UNIVERSITI KUALA LUMPUR
Malaysia France Institute**

**FINAL EXAMINATION
JULY 2010 SESSION**

SUBJECT CODE : FVD 30502
SUBJECT TITLE : VEHICLE SERVICE AND MAINTENANCE
LEVEL : DIPLOMA
TIME / DURATION : 12.30pm – 2.30pm
(2 HOURS)
DATE : 08 NOVEMBER 2010

INSTRUCTIONS TO CANDIDATES

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 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

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

- (a) Explain in detail how Preventive Maintenance can help to ensure life time and safety of the vehicle.
(5 marks)
- (b) Construct your own Normal Usage Schedule Maintenance related to engine compartment area. The schedule period should cover mileage from 15000 km to 120000 km and periods 12 months to 96 month for monthly.
(8 marks)
- (c) Describe the procedure of routine cleaning for a Low Maintenance battery.
(5 marks)
- (d) Tires on a vehicle are wearing on the outside edges. The alignment has been checked, and all adjustments are within specifications. The alignment shop says that, this is normal. Is it normal?
- i. What are the possible causes of this problem?
(3 marks)
- ii. What are the necessary corrections that should be taken in order to solve the problems?
(4 marks)

Question 2

- (a) Translate this metric tire size code : **P 205/45 R 17 Z 98**
(4 marks)
- (b) Translate this alloy wheel marking : **5 ½ - JJ x 15 4 114.3 15**
(3 marks)
- (c) For SAE and API ratings for lubrication oil classification, what does Energy Conserving 1 and Energy Conserving 2 mean?
(5 marks)

- (d) A car with 75000 kilometer mileage has white smoke coming from the exhaust system. If it is noticeable. The smoke may have a bluish tint on it
- 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 problems?
(2 marks)
- (e) What is the different between standard gearbox oil and LSD gearbox oil?
(4 marks)
- (f) Describe the procedure to change manual transmission oil.
(5 marks)

Question 3

- (a) List **SIX** properties that an Automatic Transmission Fluid should needed.
(6 marks)
- (b) Describe the correct procedure of checking Automatic Transmission fluid level.
(5 marks)
- (c) Explain the effect of having very high fluid viscosity in Automatic Transmission.
(5 marks)
- (d) While driving down the road, the driver notices a slight growling noise coming from the front end of the vehicle. There is also a slight vibration
- 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?
(3 marks)
- (e) How do you inspect the condition of timing belt in camshaft and valve drives mechanism?
(4 marks)

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

- (a) List **FIVE** item needed for checking in vehicle interior area. (5 marks)
- (b) List **FIVE** severe operating conditions which need frequent inspection more than specified for normal usage service. (5 marks)
- (c) Describe **FIVE** task needed to be perform during Tune-up procedure (5 marks)
- (d) List **FIVE** factors that effects battery life. (5 marks)
- (e) List **FIVE** factor which effects tire life for light weight vehicle. (5 marks)

Question 2

- (a) List **FIVE** main components for engine lubrication system. (5 marks)
- (b) What is the difference between single grade engine oil and multi-grade engine oil in four stroke engine lubrication system? (4 marks)
- (c) Explain the procedure of charging lubrication oil for light weight vehicle. (6 marks)
- (d) A customer has a vehicle with a manual transmission and complain that whenever the car on parking, there is always a small spot of oil on the drive way.
- 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?

(2 marks)

(e) Explain the effect of having very low fluid viscosity in Automatic Transmission.

(4 marks)

Question 3

(a) Tire manufacturers recommend rotating the tire every 20,000km. Draw a four and five tires rotation for bias ply construction.

(6 marks)

(b) Describe the procedure or performing wheel balancing for light alloy wheel.

(6 marks)

(c) List **THREE** causes of cooling system problem and EXPLAIN how to overcome the symptom.

(6 marks)

(d) When do drive or V belts need to be changed and how do you check a worn drive belt?

(3 marks)

(e) List **FOUR** components of wheel bearing.

(4 marks)

END OF QUESTION