



UNIVERSITI KUALA LUMPUR
Malaysia France Institute

FINAL EXAMINATION
JANUARY 2010 SESSION

SUBJECT CODE	: FVD 30502
SUBJECT TITLE	: VEHICLE SERVICE AND MAINTENANCE
LEVEL	: DIPLOMA
TIME / DURATION	: 9.00am – 11.00am (2 HOURS)
DATE	: 03 MAY 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 questions paper consists of TWO (2) sections. Section A and B. Answer ALL questions in section A. For sections 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) If the vehicle is used under severe operating conditions, inspections must be performed more frequently than specified for normal usage service. Give five examples of the condition. (5 marks)
- (b) Construct 'under severe operating usage schedule maintenance' related to the severe driving conditions. The schedule period should cover at least eight major components that need to be maintained. (8 marks)
- (c) What is engine tune-up? Describe three important procedure of engine tune-up? (4 marks)
- (d) For General Checking, list four items that need to be checked every time when the vehicle is driven for vehicle interior and four items should be checked monthly for vehicle exterior. For General Checking, list four items that need to be checked by monthly for vehicle interior and four items for vehicle exterior (8 marks)

Question 2

- (a) Explain three basic types of tire construction which is normally used today. (6 marks)
- (b) Translate this metric tire size code:
C 195 / 70 B 17.5 91 H (4 marks)
- (c) What is viscosity number and explain how viscosity number is rated? (5 marks)

- (d) A car with 50000 kilometer has black smoke coming from the exhaust system. It is obviously noticeable when vehicle is in hard acceleration in gear changing.
- 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 problem?
(4 marks)
- (e) Describe a suitable time to change manual axle oil and why does the manual gear oil need to be changed.
(5 marks)

Question 3

- (a) What is the purpose of friction modifier in ATF?
(5 marks)
- (b) Explain in detail how does filter protects the Automatic transmission from being damage and long lasting.
(5 marks)
- (c) Explain the effect of having very high fluid viscosity in Automatic Transmission.
(5 marks)
- (d) While driving down the road, a temperature meter shows maximum (H) reading. The driver doesn't notice when the temperature reaches the maximum reading.
- 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?
(4 marks)
- (e) Translate this code:

API SERVICE CF4 / CI-4, SM

(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 Engine compartment. (5 marks)
- (b) List FIVE *severe operating conditions* which need frequent inspection more than specified for normal usage service. (5 marks)
- (c) How do you perform specific gravity test? Discuss about the possible output result. (5 marks)
- (d) What cause lubrication oil to become degradation of oil? (5 marks)
- (e) What is the possible cause of burned bead or heat destruction at the bead area? (5 marks)

Question 2

- (a) List five properties of lubrication oil. (5 marks)
- (b) What are the advantages of multi-grade oil? (4 marks)
- (c) Explain the procedure of changing lubrication oil for light weight vehicle. (6 marks)
- (d) A customer has a vehicle with a manual transmission and complains that when he wants to change gear, it is very difficult and tight.
 - 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 problem? (2 marks)

Question 3

- (a) Tire manufacturers recommend rotating the tire every 20,000km. Draw a four and five tires rotation for radial ply construction.
(6 marks)
- (b) Describe the procedure to change timing belt for single camshaft engine.
(10 marks)
- (c) How to diagnose failure of water pump for water cooling system.
(2 marks)
- (d) Explain TWO types of common bearing failure.
(2 marks)
- (e) How to check thermostat condition for cooling system?
(5 marks)

END OF QUESTION