



UNIVERSITI KUALA LUMPUR
MALAYSIA FRANCE INSTITUTE

FINAL EXAMINATION
SEPTEMBER 2013 SEMESTER

SUBJECT CODE : FVD 35302
SUBJECT TITLE : VEHICLE SERVICE AND MAINTENANCE
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 answer booklet provided.
 4. Answers should be written in blue or black ink except for sketching, graphic and illustrations.
 5. This question paper consists of **TWO (2)** sections. Section A and B. Answer all questions in Section A. For Section B, answer **TWO (2)** question only.
 6. Answer all questions in English.
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THERE ARE 5 PRINTED PAGES OF QUESTIONS

SECTION A (Total: 60 marks)

INSTRUCTION: Answer ALL questions.
Please use the answer booklet provided.

Question 1

- (a) Why do you should perform preventive maintenance on your car?
(2 marks)
- (b) Construct 'under severe operating usage schedule maintenance' related to the severe driving conditions. The schedule period should cover at least five major components that need to be maintained. Use the below case as reference.

'Severe operating condition case': **Use as a taxi or as a rental car**
(8 marks)
- (c) Describe at least three types of battery test for low maintenance battery.
(6 marks)
- (a) Tire sidewall contains various tire information and specification. Describe these terms: Tread wear, Temperature and Traction.
(4 marks)

Question 2

- (a) Many contaminants get into the engine oil. How does dispersants help in reducing the contamination?
(4 marks)
- (b) In lubrication system, how does Energy Conserving oil contribute to fuel economy?
(6 marks)

- (c) Explain the identification for current gear oil : 75W80 API GL-5
(4 marks)
- (d) Describe the characteristics of automatic transmission fluid (ATF).
(2 marks)
- (e) How does a filter inside the automatic transmission contribute to extend the life time of the automatic transmission?
(4 marks)

Question 3

- (a) Explain the procedure to check for a wheel bearing defect.
(4 marks)
- (b) Describe four 'flaws' condition of timing belts (with illustration).
(4marks)
- (c) Describe the method used to check sprockets and tensioner for timing belt mechanism.
(4 marks)
- (d) What happens to the boiling point of coolant if the percentage of coolant is too high?
(4 marks)
- (e) What are the causes of slow warm up related to cooling system?
(4 marks)

SECTION B (Total: 40 marks)**INSTRUCTION: Answer TWO (2) questions.****Please use the answer booklet provided.****Question 1**

- (a) A vehicle had a dead battery and needed to be jump started by another vehicle. The jump start had damaged several electronic components.
- i. What are the **TWO** possible causes of this problem?
(4 marks)
 - ii. What are the necessary solutions that should be taken in order to solve the problem?
(4 marks)
- (b) The rear end of a vehicle with a limited slip differential seems to pull to one side during acceleration. Limited slip differentials are designed to provide equal push on both rear wheels.
- i. What is the possible cause for this problem?
(2 marks)
 - ii. What are the necessary solutions that should be taken in order to solve the problem?
(4 marks)
- (c) Describe the procedures of battery testing by using hydrometer.
(4 marks)
- (d) Define the tire rating: P 185/ 80 B 19 88 V and find the actual tire height.
(4 marks)

Question 2

(a) An engine has been using mineral lubrication oil and the engine oil appears to be light brown or whitish.

i. What is the possible cause for this problem?

(2 marks)

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

(4 marks)

(b) A vehicle with automatic transmission has a slight transmission leak. Lately, when the engine is cold, the transmission seems to slip when accelerating.

i. What is the possible cause for this problem?

(2 marks)

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

(4 marks)

(c) Describe **FOUR** disadvantages of synthetic lubrication oil.

(4 marks)

(d) Explain the procedure to check manual transmission lubricant.

(4 marks)

Question 3

(a) Describe the inspection needed to be done after all wheel bearing components are being disassembled.

(6 marks)

- (b) A driver of a Toyota Starlet EP71 Turbo R indicated that while driving home from work, the alternator light was suddenly turn on. Being only a few blocks from home, the driver continued driving.
- i. What is the possible cause for this problem?
(2 marks)
 - ii. What are the necessary solutions that should be taken in order to solve the problem?
(4 marks)
- (c) A car with 30000 km on it seems to be overheating. Overheats symptom immediately appear after coming off from highway. The problem becomes worst in slow speed.
- i. What is the possible cause of this problem?
(2 marks)
 - ii. What are the necessary solutions that should be taken in order to solve the problem?
(4 marks)
- (d) How to diagnose a faulty thermostat for cooling system.
(4 marks)
- (e) Describe this rim coding: 7 JJx18 108 5 -18.
(4marks)

END OF QUESTION