



**UNIVERSITI KUALA LUMPUR
Malaysia France Institute**

**FINAL EXAMINATION
JANUARY 2014 SESSION**

SUBJECT CODE : FVB 20303
SUBJECT TITLE : ADVANCE TRANSMISSION TECHNOLOGY
LEVEL : BACHELOR
TIME / DURATION : 3 HOURS
DATE :

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 three (3) question only.**
- 6. Answer all questions in English.**

THERE ARE 5 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

SECTION A (Total: 40 marks)

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

Question 1

- a) With the aid of simple diagram, explain the principle of working Continuously Variable Transmission (CVT) using drive pulley.
(10 marks)
- b) Describe **THREE (3)** advantages of Continuously Variable Transmission (CVT).
(6 marks)
- c) Describe the **TWO (2)** limitation of a Continuously Variable Transmission (CVT).
(4 marks)

Question 2

- a) Describe **FOUR (4)** roles of Hydraulic Control System.
(8 marks)
- b) List and describe the function of **THREE (3)** components of Hydraulic Control System.
(6 marks)
- c) Explain the purpose of combining a throttle position sensor and idle switch in Electronic Transmission / Transaxle Control System.
(6 marks)

SECTION B (Total: 60 marks)**INSTRUCTION: Answer only THREE (3) Questions.****Please use the answer booklet provided.****Question 3**

- a) One person would like to use a car with a six cylinder engine to tow a trailer and boat. Rectify the problems might occur when using the standard radiator and transmission?

(10 marks)

- b) One customer complains that his car has a slight transmission leak. During engine in cold running, the transmission seems to slip when he starts to accelerate. As a specialist in Automatic Transmission, you are required to diagnose and solve this problem.

(10 marks)

Question 4

- a) One driver who has an electronic transmission control in a 2008 Honda Accord complains that the transmission seems to shift very hard. The vehicle actually jerks when shifting from one gear to another. As a Service Manager at Honda Service Centre, you are required to rectify this problem.

(10 marks)

- b) You are required to rectify this problem based on this scenario.

“A Mitsubishi Pajero 1991 has transmission that has a lockup torque converter. The driver complains that the engine seems to be hunting or surging when the vehicle is at normal highway speed. The symptoms seem to be worse when the vehicle is pulling a trailer”.

(10 marks)

Question 5

- a) Based on following cases; rectify the problem of the electronic controlled transmission.

Case 1: One car that use electronic controlled transmission would not automatically shift into third and there is a check engine light or sometimes no check engine light.

(5 marks)

Case 2: One car would not start in park (P). The starter will not engage, no sound, except a main relay click but all other electrical such as headlights are working finely.

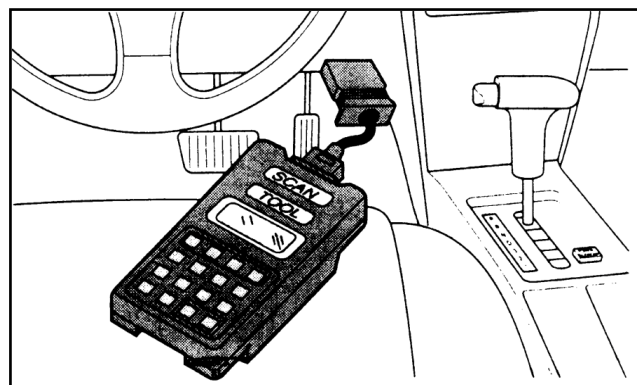
(5 marks)

- b) One customer has complained that he has work done on the car in regards to fluid leaking from the underside. He told that the mechanic also had to reprogram the gear box with the automatic transmission settings. However now the car will regularly place itself into 'safe mode', where it will not change from 3rd gear, and it comes up with a message on the display screen "Automatic Transmission Fault". As a specialist in automatic transmission, identify and solve this problem.

(10 marks)

Question 6

- a) Explain what is being done in **Figure 1** and describe **THREE (3)** functions of scan tools.



(5 marks)

Figure 1

b) Explain **THREE (3)** major types of electrical problems in electronic transmission control.

(9 marks)

c) An electronic system cannot function properly without a good battery. Battery load tester is used to test battery load but battery load test can also be made by using the vehicle's starter. Perform the procedure of battery load test by using the vehicle's starter.

(6 marks)

Question 7

a) **Figure 2** shows one test is carried out to check on solenoid conditions. Explain the test has been done.

(6 marks)

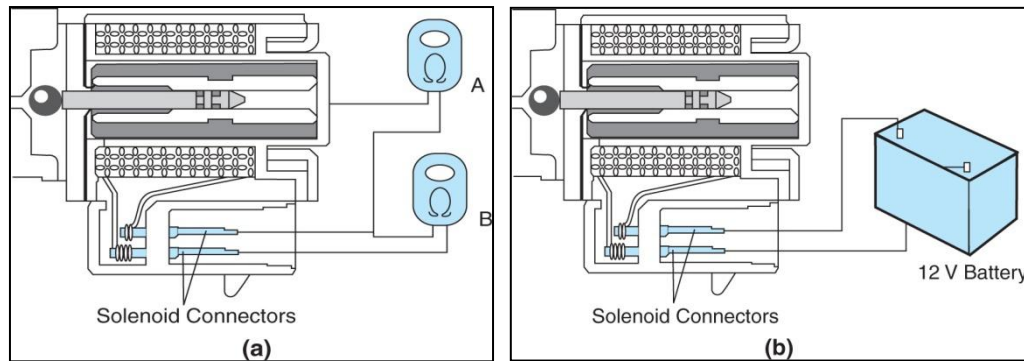


Figure 2

b) Explain the function of transmission service light.

(4 marks)

c) Explain the procedures to be taken when dealing with a transmission flashing lights if transmission service light starts showing up in your dash panel.

(10 marks)

END OF QUESTION