



**UNIVERSITI KUALA LUMPUR  
Malaysia France Institute**

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**FINAL EXAMINATION  
SEPTEMBER 2014 SESSION**

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<b>SUBJECT CODE</b>	<b>:</b>	<b>FVB20303</b>
<b>SUBJECT TITLE</b>	<b>:</b>	<b>ADVANCE TRANSMISSION TECHNOLOGY</b>
<b>LEVEL</b>	<b>:</b>	<b>BACHELOR</b>
<b>TIME / DURATION</b>	<b>:</b>	<b>2.00 PM – 5.00 PM (3 HOURS)</b>
<b>DATE</b>	<b>:</b>	<b>30 DECEMBER 2014</b>

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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 three (3) question only.**
  - 6. Answer all questions in English.**
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**THERE ARE 4 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.**

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**SECTION A (Total: 40 marks)****INSTRUCTION: Answer ALL Questions.****Please use the answer booklet provided.****Question 1**

- a) Describe **THREE (3)** roles of hydraulic control system. (6 marks)
- b) Explain **TWO (2)** functions of Electronic Transmission Control Unit. (6 marks)
- c) Explain **FOUR (4)** the benefits of a microcomputer control transmission system over the mechanical systems? (8 marks)

**Question 2**

- a) Explain how to prevent the vehicle from accidentally starting in a gear in electronically controlled automatic transmission? (6 marks)
- b) Explain how the Automatic Transmission Module (TCU) unit set the appropriate gear ratio through solenoid valve. (8 marks)
- c) Explain **THREE (3)** devices to determine the speed of the output shaft in automatic transmission. (6 marks)

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

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

**Case 1:** One car that uses electronic controlled transmission would not automatically shift into third gear 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 does not engage, has no sound, except a main relay click but all other electrical component such as headlights are working fine.

(5 marks)

- (b) One customer has complained that he has work done on the car previously because fluid was 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 as "Automatic Transmission Fault". As a specialist in automatic transmission, identify and solve this problem.

(10 marks)

**Question 4**

- a) Explain **ONE (1)** purpose of combining a throttle position sensor with idle switch in Electronic Transmission / Transaxle Control System.

(6 marks)

b) An electronic system cannot function properly without a good battery. Battery load tester is used to test battery load but it can also be made by using the starter motor. Explain the procedures of battery load test by using the starter motor.

(6 marks)

c) Explain **FOUR (4)** simple rules to follow when performing testing and working on electrical transmission control.

(8 marks)

### Question 5

a) Explain **TWO (2)** general procedures used to overhaul an automatic transmission.

(8 marks)

b) Explain the term of overhauled automatic transmission/transaxles.

(6 marks)

c) Explain the procedure to check condition of one-way clutch and how to maintain one-way clutch in good condition when assembling automatic transmission/transaxle.

(6 marks)

### Question 6

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

(6 marks)

b) An ammeter is used and attached at the solenoid connector and the reading is observed. Explain procedure for troubleshooting solenoid in electrical transmission unit to check the third gear engages by using ammeter.

(10 marks)

- c) Describe the procedures when dealing with a transmission flashing lights if transmission service light starts showing up in your dash panel.

(4 marks)

**END OF QUESTION**