UNIVERSITI KUALA LUMPUR  
Malaysia France Institute

FINAL EXAMINATION  
JULY 2010 SESSION

SUBJECT CODE : FVD 30302  
SUBJECT TITLE : COMFORT SAFETY AND INFORMATION SYSTEM  
LEVEL : DIPLOMA  
TIME / DURATION : 12.30pm – 2.30pm  
2 HOURS  
DATE : 18 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. Answer all questions.
6. Answer all questions in English.

THERE ARE 7 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.
SECTION A (Total: 100 marks)
INSTRUCTION: Answer all questions
Please use the answer booklet provided.

Question 1
These are typical cases of problems with the alarm system that a technician often needs to diagnose. Knowledge of the basic alarm circuit and simple test procedures will help you perform the diagnosis quickly and efficiently. Please refer to figure 1.1 and figure 1.2 for the vehicle alarm wiring diagram.

Customer Complaint
A customer towed his vehicle into the workshop with an alarm system problem and complained that:
   i) She cannot start the engine
   ii) The siren always triggered

Known Information
- Vehicle operating voltage = 13.7 volt
- All circuit fuses are OK
- Alarm module is in good condition
- The H.P (High Frequency) remote unit is OK

Answer the following question.

1. With the known information above, what is the most likely cause of the problem in (i) and (ii). (10 marks)

2. What diagnostic steps would you use to find the suspected problem in (i) and (ii)?
   Draw the flow chart to show the steps taken. (20 marks)

3. Draw a normally open relay, normally close relay and combination relay internal circuit. (10 marks)
Figure 1.1

COMFORT SAFETY AND INFORMATION SYSTEM
STARTING SYSTEM

Figure 1.2
Question 2
These are typical cases of problems with the seat adjustment system that a technician often needs to diagnose. Knowledge of the basic seat adjustment circuit and simple test procedures will help you perform the diagnosis quickly and efficiently.
Please refer to figure 2 for the seat adjustment wiring diagram.

Customer Complaint
The rear height (Up and Down position) of the seat adjustment is not functioning.

Known Information

☐ vehicle operating voltage = 14 volts  
☐ the switch is OK

Answer the following questions on a answer paper given.

a. With the above known information, what is the most likely caused for the defective seat adjustment system? (6 marks)

b. What happen to the seat if we press and hold the forward position seat switch for a certain time and release? WHY? (6 marks)

c. What happen to the system if the connector at ground wire (C310) in figure 2 is disconnected? WHY? (6 marks)

d. What diagnostic steps would you use to find the suspected problem for the front and rear height (Up position) of the seat adjustment is not functioning? 
Draw the flow chart to show the steps taken. (12 marks)
POWER SEAT: DRIVER 6-WAY (AG1)

NOT AT ALL TIMES

SEE POWER DISTRIBUTION
PAGE BA-10-1

DEFROG SEATS CIRCUIT BREAKER 12 30 AMP

5 ORN 1240

2 ORN 1240

3 ORN 1240

A CR10

2 ORN BLE 1240

UP DUSE BLOCK

TO REAR DEFROGGER
PAGE BA-61-0.1

UP

UP

ENTIRE SEAT

UP

ENTIRE SEAT

DOWN OF SEAT

DOWN

REAR OF SEAT

DOWN FORWARD

ENTIRE SEAT

BACK

SEAT ACTIONS

SEAT ACTUATOR ASSEMBLY

DRIVER

POWER SEAT ACTUATOR ASSEMBLY

POWER SEAT SWITCH

E IMPORTANT:

- EACH MOTOR CONTAINS AN ELECTRONIC CIRCUIT BREAKER (ECB).
- ECB RESISTANCE INCREASES IF MOTOR IS OVERLOADED.
- RESISTANCE RETURNS TO NORMAL AFTER VOLTAGE IS REMOVED FROM MOTOR TERMINALS.

Figure 2

COMFORT SAFETY AND INFORMATION SYSTEM

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Question 3
These are typical cases of problems with the power window system that a technician often needs to diagnose. Knowledge of the basic power window circuit and simple test procedures will help you perform the diagnosis quickly and efficiently. Please refer to figure 3 for the power window wiring diagram.

Customer Complaint
A customer complaint that the **power window on the front-left hand side is not working but the others are working.**

Known Information
- Vehicle operating voltage = 14 volts
- Power window relay is OK.
- Other devices except front-left hand side power window operate properly.
- All switches at power window main switch are OK.

Circuit Analysis
Answer the following questions by referring to **figure 3**.

1. What is the most likely cause for the above problem? (10 marks)

2. How do you troubleshoot this problem? Explain using chart diagram. (12 marks)

3. What happen to the power window system if the *one touchdown circuit* at the power window main switch is totally damage? (4 marks)

4. What happen if *window lock switch* button is pressed? (4 marks)
Figure 3

END OF QUESTION