



**UNIVERSITI KUALA LUMPUR  
Malaysia France Institute**

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**FINAL EXAMINATION  
SEPTEMBER 2013 SESSION**

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**SUBJECT CODE** : FVD 24402  
**SUBJECT TITLE** : COMFORT SAFETY AND INFORMATION SYSTEM  
**LEVEL** : DIPLOMA  
**TIME / DURATION** : ( 2 HOURS )  
**DATE** :

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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 **ONE** side 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 **TWO (2)** questions only.
6. Answer all questions in English.

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**THERE ARE 8 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.**

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**SECTION A (Total: 60 marks)****INSTRUCTION: Answer ALL questions.****Question 1**

- a) What is **MUX** (Multiplexing)? And name two basic mode of MUX method in term of channel bandwidth and time, signal and particular phase, frequency or time. (4 marks)
- b) List the THREE (3) advantages when MUX is applied in vehicular electrical system? (6 marks)
- c) Draw a VAN and CAN protocol. (8 marks)
- d) Why do the MUX wire are twisted together? (2 marks)

**Question 2**

- a) What is SRS stand for? (1 mark)
- b) What is the purpose of SRS air bag system? (4 marks)
- c) In SRS Air bag system, there will be a various type of air bag module fitted in the vehicle, name FOUR type of air bag module available. (4 marks)
- d) In advance front air bag module, what are the criteria which determine the air bag deployment size and speed? (5 marks)

**Question 3**

- a) What is the type of speaker used for each of the frequency stated below:  
 i. 500-15000 Hz  
 ii. 40 -500 Hz  
 iii. 10-22 KHz (3 marks)
- b) If you decides to buy a **BASIC** Head Unit from the accessories shop. List the **SEVEN(7)** criteria should be taken as a consideration before buying the head unit. (5 marks)
- c) Calculate the total impedance of speaker type A and B below if connected in parallel and serial.  
 Speaker type A, 50W 4Ω  
 Speaker type B, 30W 6Ω (4 marks)

**SECTION B (Total: 40 marks)****INSTRUCTION: Answer TWO (2) questions only.****Question 1**

The following case study is for a typical devices and circuit problem that technicians are often required to diagnose. Knowledge of the circuit and test procedures can help you to diagnose the circuit safely and efficiently.

**Customer Complaint**

A customer complaint that the power window on **FRONT RIGHT** side is not working but the rest are working.

**Known Information**

- Vehicle operating voltage = 14 volts
- Power window relay is in good condition.
- Other devices **EXCEPT** front right side power window operate properly.
- All switches at power window main switch are in good conditions.

**Circuit Analysis**

Answer the following questions by referring to Power Window Wiring diagrams in **figure 1**.

- i) What is the most likely cause for power window of the **FRONT RIGHT** side to be malfunctioning?

(10 marks)

- ii) What diagnostic steps are helpful when troubleshooting this system? You may explain by using a chart diagram.

(10 marks)

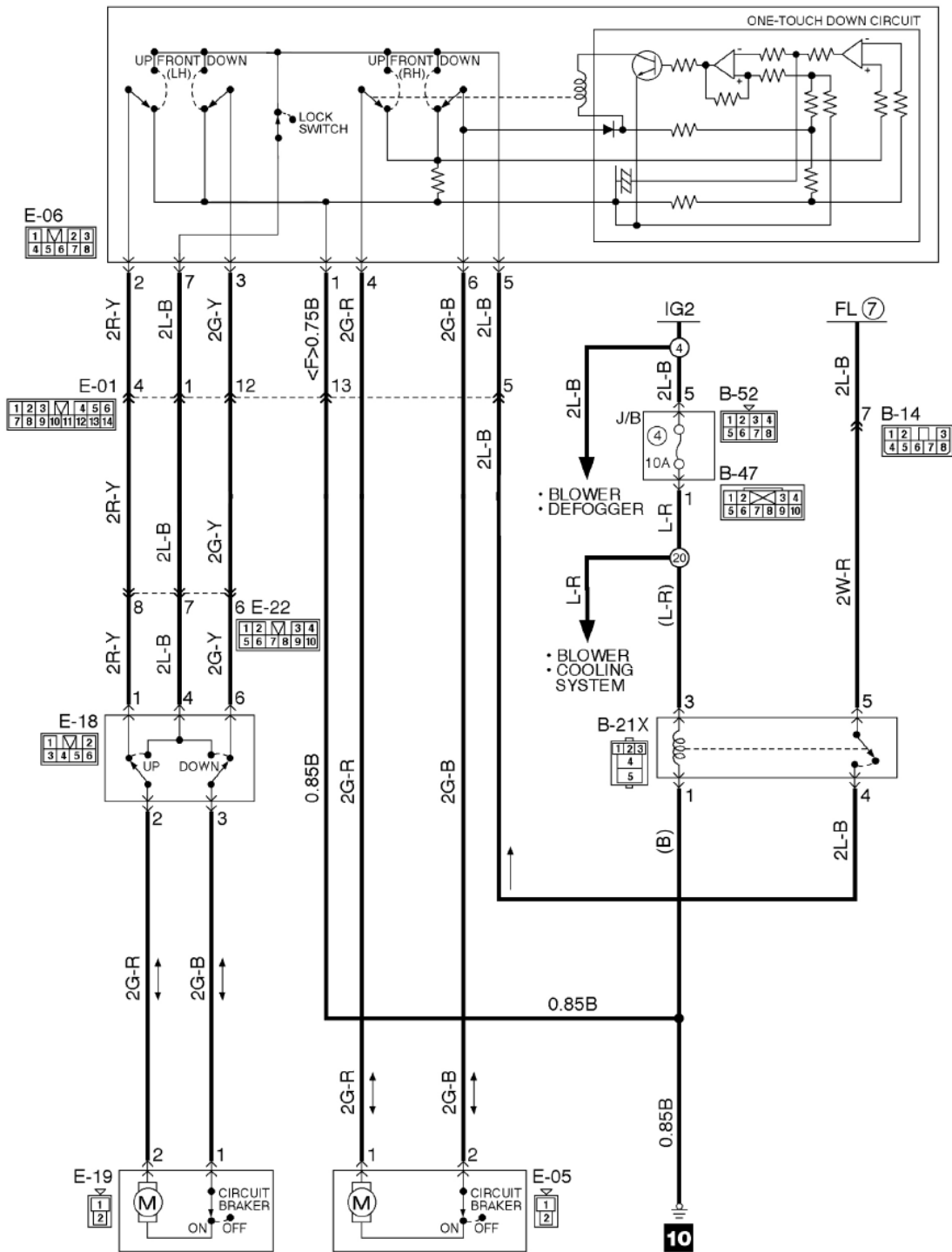


Figure 1

**Question 2**

The following case study is typical seat adjustment system problem that technicians often need to diagnose. Knowledge of seat adjustment circuit and simple test procedures will help you perform the diagnosis quickly and efficiently. Please refer to the wiring diagram Citroen C5 vehicle attached in **figure 2**

**Customer Complaint**

A customer came to the workshop with an electrical seat adjustment problem. The customer complained that the **FORWARD AND BACKWARD** seat adjustment system not function.

**Known Information**

- Vehicle operating voltage = 14 volt
- Wiring system is in good condition
- BSI operate correctly

**Answer the following question.**

- i) What diagnostic steps would you use to find the suspected problem above? Explain by drawing a chart diagram.

(15 marks)

- ii) How do you confirm the seat adjustment power relay is in good condition? (5 marks)

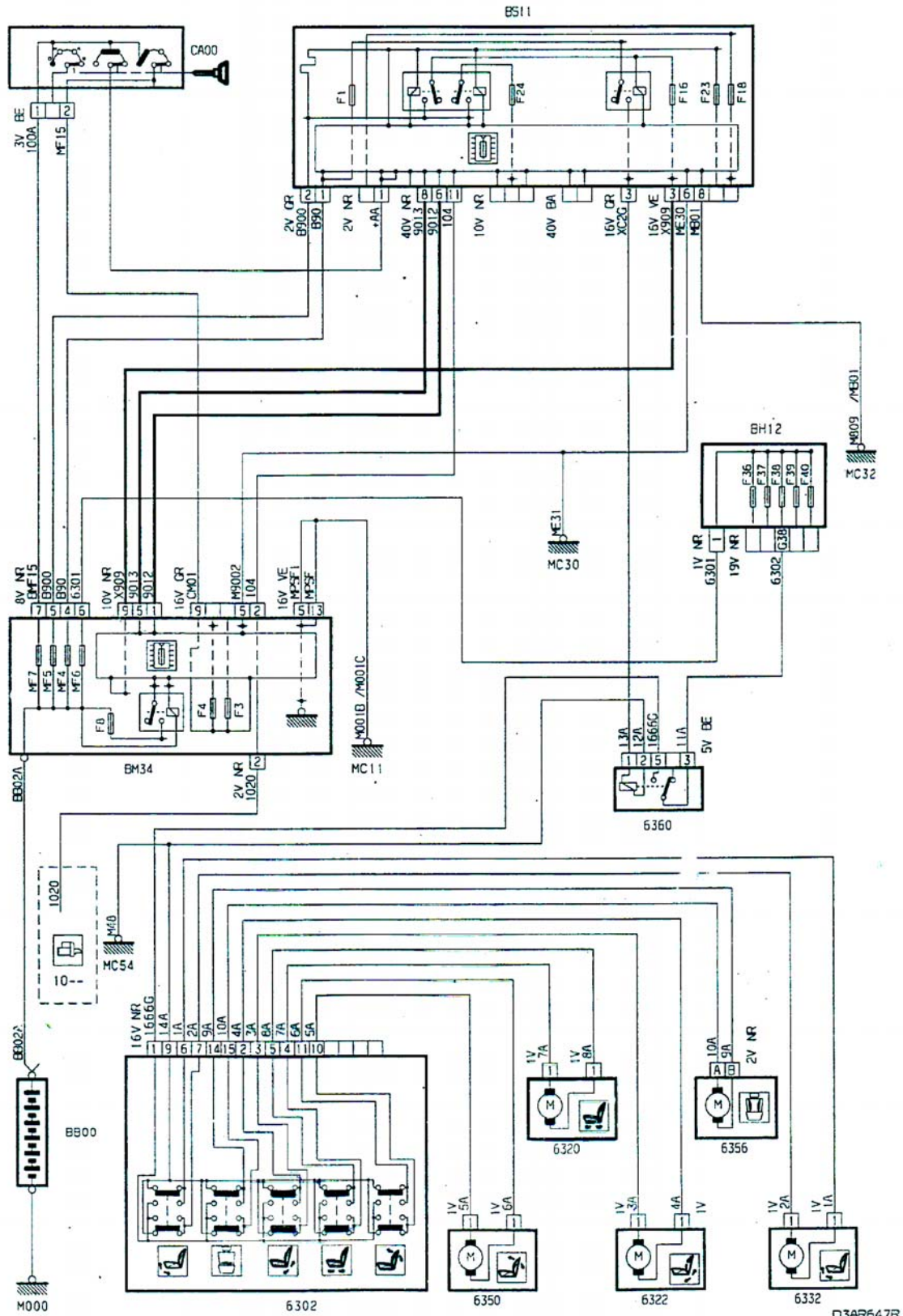


Figure 2

D3AR647R

**Question 3**

This case study is about the central door locking system fitted on Proton Wira Sedan which cannot fully function. By referring to the wiring diagram given ( figure 3.1 and 3.2), answer the following question.

**Customer Complaint**

The central door locking cannot function at all.

**Known Information**

- vehicle operating voltage = 14 volts
- all fuses are in good conditions
- door lock control module is in good condition

**Answer the following questions on an answer paper given.**

i) With the above known information, what is the most likely cause for the inoperative central locking system above?

(8 marks)

ii) What would happen to the system if **9022C** wire at BSI is disconnected? Why?

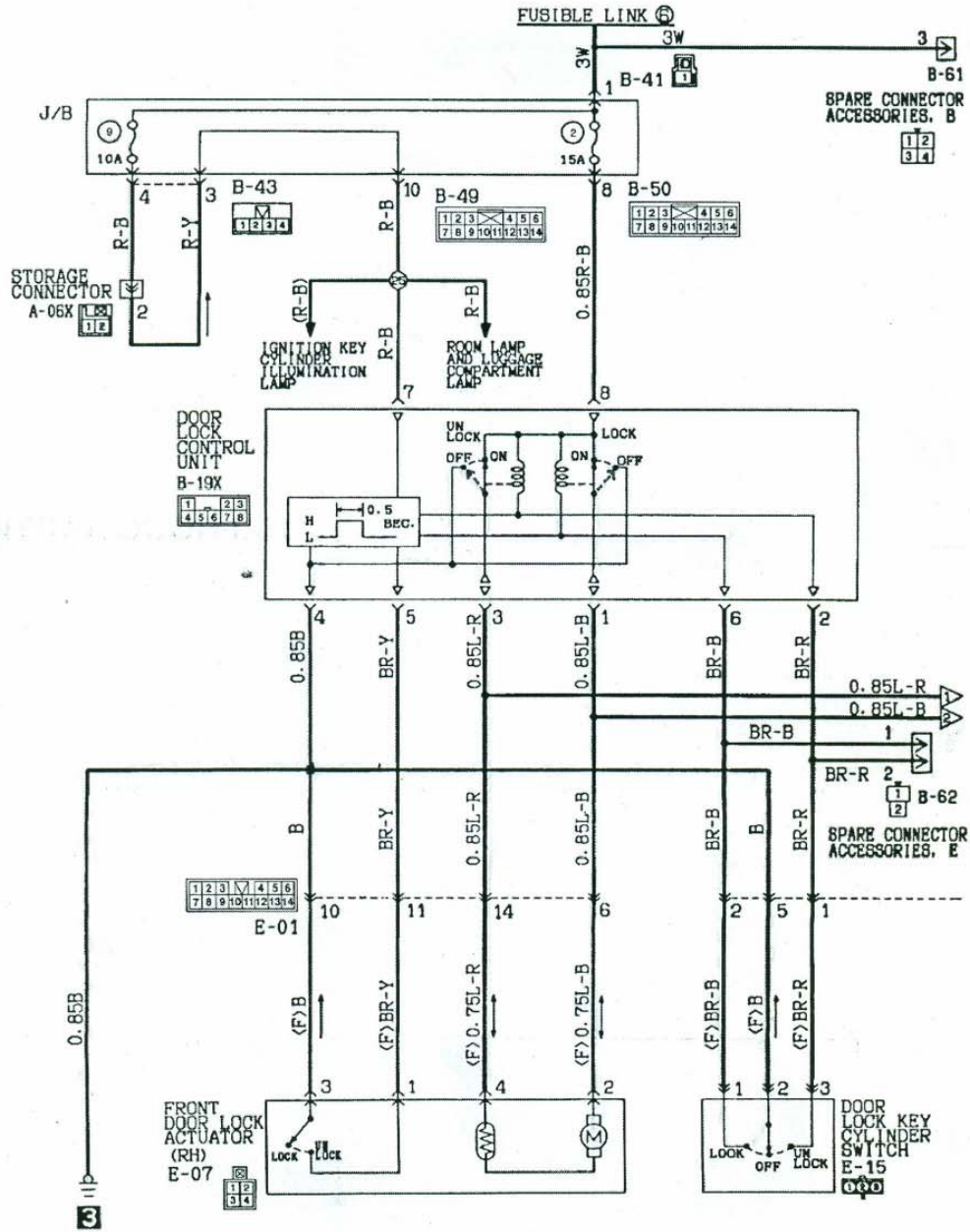
(4 marks)

iii) What would happen to the system if **MF4** at BM 34 is disconnected? Why?

(8 marks)

# CENTRAL DOOR LOCKING SYSTEM

Sedan and Hatchback



Wire colour code  
 B: Black    LG: Light Green    G: Green    L: Blue    W: White    Y: Yellow    SB: Sky Blue  
 BR: Brown    O: Orange    GR: Gray    R: Red    P: Pink    V: Violet

Figure 3.1



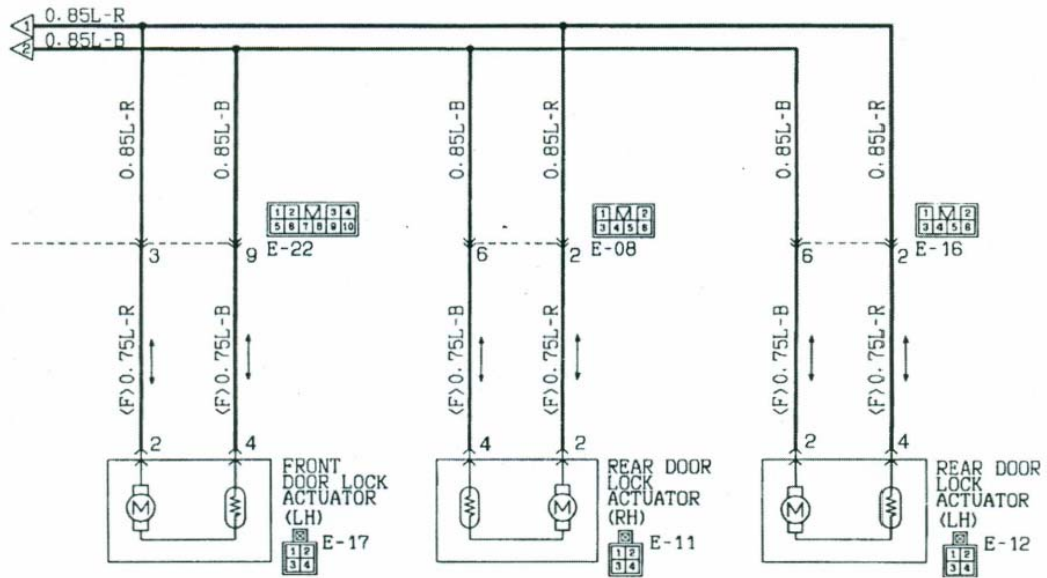


Figure 3.2

END OF QUESTION