



**UNIVERSITI KUALA LUMPUR**  
**Malaysia France Institute**

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**FINAL EXAMINATION**  
**JULY 2010 SESSION**

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**SUBJECT CODE** : FVB 20203  
**SUBJECT TITLE** : ADVANCE AUTOTRONIC  
**LEVEL** : BACHELOR  
**TIME / DURATION** : 9.00am – 12.00pm  
( 3 HOURS )  
**DATE** : 15 NOVEMBER 2010

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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 Section A and Section B. Answer all questions.
6. Answer all questions in English.

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**THERE ARE 6 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.**

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**SECTION A (Total: 20 marks)****INSTRUCTION: ANSWER ALL QUESTION**

1. To suppress static or radio frequency interference, a capacitor may be
  - a. installed in the alternator
  - b. connected to the positive coil terminal
  - c. installed near the radio on the rear of the instrument panel
  - d. all of the above
  
2. Which of the following is *not true* in Multiplex network?
  - a. managed by a central ECU, which is the BSI unit
  - b. uses two communication protocols : the VAN and CAN network
  - c. simplification of the electrical harnesses
  - d. a multiplexed structure consists of a single circuit which relies on all the ECU's called VAN BUS
  
3. All of the components below are in the CAN Multiplexed networks *except*:
  - a. Engine ECU
  - b. Automatic Gearbox ECU
  - c. Instrument Panel ECU
  - d. Suspension ECU
  
4. By referring to the seat adjustment Citroen models C5 wiring diagram, the connection within the control switch and the motor is in:
  - a. series connection
  - b. parallel connection
  - c. series and parallel connection
  - d. none of the above
  
5. Which of the following is *not true* for the power window system?
  - a. one touch down switch can operate at the driver side only
  - b. driver side switch can control all of the windows
  - c. if one touch down switch problem, the power window switch at the driver side totally cannot be used
  - d. the sub switch at rear side operate independently
  
6. The permanent-magnet power window motors are grounded through the switch and may contain \_\_\_\_\_.
  - a. internal circuit breaker
  - b. resistor
  - c. diode
  - d. all the above

7. The sun roof can be controlled \_\_\_\_\_.
- manually and automatically
  - manually only
  - automatically
  - none of the above
8. The sun roof operation for C5 Citroen model, is controlled automatically as a function for the following **EXCEPT**:
- vehicle speed
  - wiper operation
  - use of the remote control
  - pressing on the brake pedal
9. For the 4G9 vehicle control locking system, the signal from remote control is always received through \_\_\_\_\_?
- door lock control unit
  - engine ECU
  - alarm control unit
  - remote control unit
10. Which of the following is **true** for the 4G9 model vehicle central locking system?
- by pressing the high frequency remote control for unlocking, the signal is sent directly to the door lock control unit
  - the driver side is a master in controlling the entire locking system
  - when the driver side locking system is not working, the entire system is also not functioning
  - all the above
11. Which of the following is **true** for the cruise control function?
- the driver can exceed the programmed speed by pressing the accelerator pedal
  - the driver can alter the programmed speed by pressing the cruise control switch
  - the driver can cancel the cruise control function by pressing the brake pedal
  - all the above

12. The COM 2000 performs the following functions *EXCEPT*:
- control of the buzzer incorporated into the support depending on the sound requests sent by the BSI.
  - transmits the user actions to the BSI via the BODY VAN 2 Multiplexed network
  - reception of high frequency messages
  - communication with the transponder for the engine immobilizer.
13. All the followings are monitored by the alarm control unit *EXCEPT*:
- bonnet switch
  - door lock key cylinder switch
  - starter
  - sun roof
14. What would happen if the ground connection at alarm control unit is in open circuit?
- the alarm system still can be triggered but for the certain function only
  - the siren will be triggered automatically
  - the entire system cannot function
  - all the above
15. Technician A says the air bag module is electrically connected in the steering column through a clock spring assembly. Technician B says all air bag systems use a roller-type impact sensor to arm the air bag module. Who is *CORRECT*?
- A only
  - B only
  - Both A and B
  - Neither A and B
16. When handling or servicing on undeployed air bag module, observe the following safety precautions. Which of this following is *NOT TRUE*?
- never store an air bag module in a high heat area
  - always carry the air bag module facing away from you
  - store air bag module on clear bench by facing it downward and in a service area
  - avoid static electricity
17. What is the function of the cross-over in audio system?
- to amplify the sound system
  - to reduce of the bass sound
  - to separate the bass and treble band
  - none of the above



18. All the interferences of the vehicle audio system are caused by the following **EXCEPT**?
- a. alternator
  - b. blower motor
  - c. electric fuel pump
  - d. wiper blade
19. Technician A says a relay's contact points are energized by a small internal coil. Technician B says a relay's contact point are energized electro-magnetically. Who is **CORRECT**?
- a. A only
  - b. B only
  - c. both A & B
  - d. Neither A nor B
20. Wires with double color codes are being discussed. Technician A says the first letters indicate the base color of the insulation. Technician B says the second set of letters indicate the color of the tracer. Who is **CORRECT**?
- a. A only
  - b. B only
  - c. both A & B
  - d. Neither A nor B

### Section A (continued)

#### Short Answer (20 marks)

21. What is the good alarm system? (4 marks)
22. What are the normal functions of alarm system? (4 marks)
23. What are the possibilities available in Radio Data System (RDS)? (4 marks)
24. What are the main subassemblies of cruise control system? (4 marks)
25. How does the cruise control system can be deactivated? (4 marks)

**SECTION B : (60 MARKS)****INSTRUCTION: Answer all questions.****Please use the answer booklet provided.****Question 1**

1. What is the definition of multiplexing (6 marks)
2. List all of the network existed in the multiplexing system (6 marks)
3. What will happened if one of the wire network of the multiplexing in VAN network is disconnected or broken (6 marks)
4. What happened to the vehicle if one of the CAN ECU is malfunction (6 marks)
5. List all the system that related for the VAN comfort in a vehicle (6 marks)

**Question 2**

- a) What type of speaker used for each of the frequency ( 3Marks )  
stated below:
  - i) 300-5000 Hz
  - ii) 5-1800 Hz
  - iii) 22-25 KHz
- b) What is the general consideration applied when installing ( 6Marks )  
the audio system to the vehicle?

- i. You are given an audio system component as listed below.

**AUDIO SYSTEM COMPONENT**

- |   |   |
|---|---|
| <p>1. <b>PLAYER UNIT</b><br/>- ALPINE CDM-7874EB<br/>- 50W X 4</p>  | <p>2. <b>AMPLIFIER</b><br/>- PIONEER DEH-P1450<br/>- 4-Channel<br/>- 600 Watts<br/>- 4 Ohm</p>                  |
| <p>3. <b>SPEAKER A – 2 UNIT</b><br/>ULTIMATE ACW 1200<br/>Size: 6"<br/>Power output: 300Watts<br/>Impedance : 4 Ohm</p> | <p>4. <b>SPEAKER B – 2UNIT</b><br/>ALPINE ZR<br/>Size: 6"<br/>Power output: 150 Watts<br/>Impedance : 2 Ohm</p> |

- i) Please draw the wiring connection for the system. ( 3Marks)
- ii) Calculate amplifier's watt output per-channel ( 3Marks)
- iii) Calculate impedance of speaker A and B with series and parallel connection ( 6Marks)
- iv) Calculate max. power output for speaker connection ( series & parallel) ( 6Marks)  
( 3Marks)
- v) Decide which type of the speaker connection will give more efficiency

**END OF QUESTION**