CONFIDENTIAL

SET B

UNIVERSITI KUALA LUMPUR
Malaysia France Institute

FINAL EXAMINATION

JANUARY 2011 SESSION

SUBJECT CODE	:	FVD 20102
SUBJECT TITLE	:	CHASSIS BRAKING SYSTEM 2
LEVEL	:	DIPLOMA
TIME / DURATION	:	3.30pm – 6.00pm (2.5 HOURS)
DATE	:	11 MAY 2011

INSTRUCTIONS TO CANDIDATES

1. Please read the instructions given in the question paper CAREFULLY.

2. This question paper is printed only 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.

5. This questions paper consists of 5 questions. Answer ALL questions.

6. Answer all questions in English.

7. Please return back all questions paper to the invigilator

THERE ARE 3 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

INSTRUCTION: Answer all questions.

Question 1 (20 Marks)

Vehicle speed	Warning led status	Operating Voltage	Voltage
Vv 110 km/h	Not Active	5V	12.5V

Front RH Wheel	Front LH Wheel	Rear RH Wheel	Rear LH Wheel
Vw 80 km/h	Vw 85 km/h	Vw 90 km/h	Vw 95 km/h

Figure 1: ABS diagnostic data

Referring to the ABS diagnostic data, you are required to:

a)   Give the definition of wheel slip   (2 marks)

b)   State and explain 3 stages of Wheel slip   (6 marks)

c)   Give the formula to calculate the Wheel Slip ratio percentage (%)   (2 marks)

d)   Calculate the above slip for each wheel and state the status of each wheel

(8 marks)

e)   What is the function of Microcontroller inside ABS control unit?
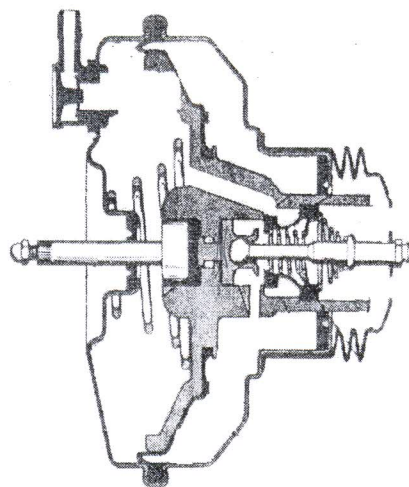
(2 marks)

Question 2 (20 Marks)

Figure 2: Brake servo

a)   In figure 2, the position of the ports indicates ...Applied position   (2 marks)

b)   Explain the operation of how the position in Q2a is achieved.   (8 marks)

press pedal , valve operating rod move, valve plunger move to left move poppet valve to contact vacuum port seat , opening athmospheic port

[handwritten note at top: 1. Run the engine 2. step on brake pedal with normal pressure 3. with the engine stop, step on brake pedal several time 4. with engine running step on brake pedal and then stop engine]

c) Explained 4 steps of basic testing on how to identify the brake servo is in good condition.   *(10 marks)*

Question 3 (20 Marks)

Brake	Front		Rear		Stationary Brake	
	Left	Right	Left	Right	Left	Right
Rolling resis N	203	150	66	102		
Ovalization %	3	0	9	11		
Max brake effect N	3116	3123	1054	961	1597	1433
Force at max diff N	2424	2230	1028	900	1559	1292
Weight	387	398	215	221		

Table 1 Xsara 1.8 test result

a) Find the percentage of Wander effect and rear Adherence adopted on front brake system by referring to table 1?

(10 marks)

b) Calculate a wheel with a side-slip of 6 m/km and a rim diameter 12", how much toe-in will be?

(3 marks)

c) What is the meaning of Rolling resistence in CEMB machine?   *(3 marks)*

d) Base on the table 1, if the ovalization is more than 10% what will be the causes?

(4 marks)

Question 4 (20 Marks)

a) List two disadvantages on manual steering?   *(4 marks)*

b) Explain why collapsible steering column is called passive safety?   *(6 marks)*

c) Give 2 advantages of Four Wheel Steering System over Two Wheel Steering System.

(4 marks)

d) Explain the operation of power steering flow control valve during idling at 800 – 1000 RPM?

(6 marks)

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Question 5 (20 marks)

a) List three type of power steering those exist in the current market? *(3 marks)*

b) What is the function of pressure distributor valve of hydraulic power assisted steering

(6 marks)

c) Why integral type of power steering is more popular fitted in passenger car?

(5 marks)

d) Explained how the power-steering pump works on the vanes type?

(6 marks)

END OF QUESTION

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