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SET A

UNIVERSITI KUALA LUMPUR
Malaysia France Institute

FINAL EXAMINATION

JULY 2010 SESSION

SUBJECT CODE	:	FVD 20102
SUBJECT TITLE	:	CHASSIS AND BRAKING SYSTEM 2
LEVEL	:	DIPLOMA
TIME / DURATION	:	9.00am – 11.00am (2 HOURS)
DATE	:	20 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. This question paper consists of TWO (2) Sections. Section A and B. Answer all questions.
6. Answer all questions in English.
7. Please return the question paper to the invigilator after examination end.

THERE ARE 7 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

SECTION A (Total: 30 marks)

INSTRUCTION: Answer ALL questions.

1. Technician A said that one output from the Antilock Braking System Control Module is the hydraulic wheel circuit valves. Technician B said that one output from the Antilock Braking System Control Module is the brake warning lamp. Who is actually correct?

   A. A only
   B. B only
   C. Both A and B
   D. Neither A nor B
   E. None of the above

2. Antilock braking systems are design to prevent wheel lockup under...

   A. Light braking condition
   B. Heavy braking condition
   C. Heavy loaded condition
   D. Lightly loaded condition
   E. None of the above

3. At Pressure hold operation the Antilock Braking System Control Module send electrical current to .....

   A. Wheel speed sensor
   B. Inlet solenoid valve
   C. Hydraulic motor
   D. Outlet solenoid valve
   E. All of the above

4. CEMB Brake test machine is to test...

   I) Braking System
   II) Engine System
   III) Alignment System
   IV) Suspension System

   A. I, and II
   B. I, III and IV
   C. I, II and III
   D. I, II, III and IV
   E. None of the above

5. Which of the following spool valves changes passageways *by* rotating?

A. The sliding spool valve
B. The rotary spool valve
C. The positive displacement spool valve
D. The vane spool valve
E. None of the above

6. Which of the following is *not* a component on an Antilock Braking System?

A. Wheel speed sensors.
B. Pump and motor
C. Antilock brake control module (ABCM)
D. Anti – wear brake pad sensor
E. All of the above

7. Why does a brake servo booster is fitted to modern vehicle?

A. To gave pleasure to the driver when driving.
B. To reduce the amount of pedal pressure necessary to stop the car
C. To reduce the amount of pedal travel adjustment
D. To be sure the amount of pressure is maximise to the brake system.
E. None of the above

8. Which are ***true*** about Ovalisation in CEMB Brake test machine?

I) The value is expressed in %
II) It represents the fluctuation in the braking force
III) To show the amount of friction without braking
IV) The operator will feel a rhythmic oscillation on the brake pedal

A. I and II
B. I, II and III
C. I, II and IV
D. I, II, III and IV
E. None of the above

9. ABS Parameter in Diagnostic tool

Front Left Wheel speed sensor	0km/h
Front Right Wheel speed sensor	0km/h
Rear Left Wheel speed sensor	0km/h
Rear Right Wheel speed sensor	0km/h
Warning light status	OFF
Engine RPM	0

Figure A

The above data in ***figure A,*** ABS Parameter in diagnostic tool can be **assumed** as....

I. The vehicle is not moving while the ignition switch "OFF"
II. The vehicle is moving while the diagnostic tool is operating
III. The vehicle is not moving while the ignition switch is "ON"
IV. The vehicle is started to move with the gear engage at D position

A. I
B. II and III
C. III
D. IV
E. None of the above

10. The specific function of Select Low Logic in ABS system is to....

I. improve stability during cornering
II. improve stability during High Speed
III. prevent Low pressure in the Hydraulic Control Unit.
IV. prevent High pressure in the Hydraulic Control Unit.

A. I and III
B. II
C. III and IV
D. None of above
E. All of the above

11. In the Vacuum Assisted Braking System (diesel engine) vacuum is the source from...

A. Inlet manifold
B. Exhaust manifold
C. Air compressor
D. Vacuum pump
E. None of the above

12. When a tire locks up completely during a stop, it is said that there is ..... slip.

A. Minimum
B 100%
C. 50%
D 25%
E. None of the above

13. What is a "Brake Feel" means in brake servo?

I This reaction force is directly proportional to pressure created within the master cylinder.
II The movement of the valve plunger is transmitted to the valve operating rod on to the brake pedal.
III The compressed rubber reaction disc transmit this reaction pressure to both the diaphragm plate and the valve plunger.
IV The pressure on the plunger valve tends to force it to the right (without moving diaphragm plate), causing the valve to close off the atmospheric port.

A. I and II
B. I, II and III
C. I, II, III and IV
D. II and III
E. None of the above

14. The ..... is used to sense the speed of each wheel.

A. Wheel speed sensor
B. Pump and motor
C. Antilock brake control module (ABCM)
D. Front suspension spring
E. None of the above

15. In Brake Servo System, what will happen to the "poppet valve" during Applied position?

I Poppet valve will close the vacuum port
II Poppet valve will open of atmospheric port
III Force From operating rod cause the poppet to close the vacuum port and open the atmospheric port
IV Force from the operating rod cause the valve plunger leave the poppet valve and open the atmospheric port.

A. I and III
B. II and III
C. I, II, III and IV
D. I, II, and III
E. None of the above

SECTION B (Total: 70 marks)

Answer all questions

Question 1

a) Name general types of power-steering that are used in automobiles? (*2 marks*)

b) From the above answer describe the differences between both types of power steering.

(*8 marks*)

c) What type of power steering that is popular fitted in passenger car and why it is fitted?

(*10 marks*)

Question 2

Fill in the blank with **ON** or **OFF** the operation of the ABS according to their mode that is shown below:-

Operation Mode	Solenoid Valve "IN"	Solenoid Valve "OUT"	Motor
Normal			
Hold	**ON**		
Reduce			**OFF**
Increase			

(*10 marks*)

Question 3

Brake Servo System, are currently fitted to all modern vehicles in the braking system.

a) List ***THREE*** advantages on this brake Servo. (*3 marks*)

b) Explain how does the **"Holding Operation"** function in the brake servo? (*5 marks*)

c) "Customer Complaint that the brake pedal **"FEEL"** very hard when it is applied and the brake response is not really effective." As a technician, you are required to carry out a test on the brake servo.
Describe the testing method on the brake servo without using a test gauge. (*12 marks*)

Question 4

a) With the aid of a sketch, explain the operation of Flow Control Valve during High Speed. *(10 marks)*

b)

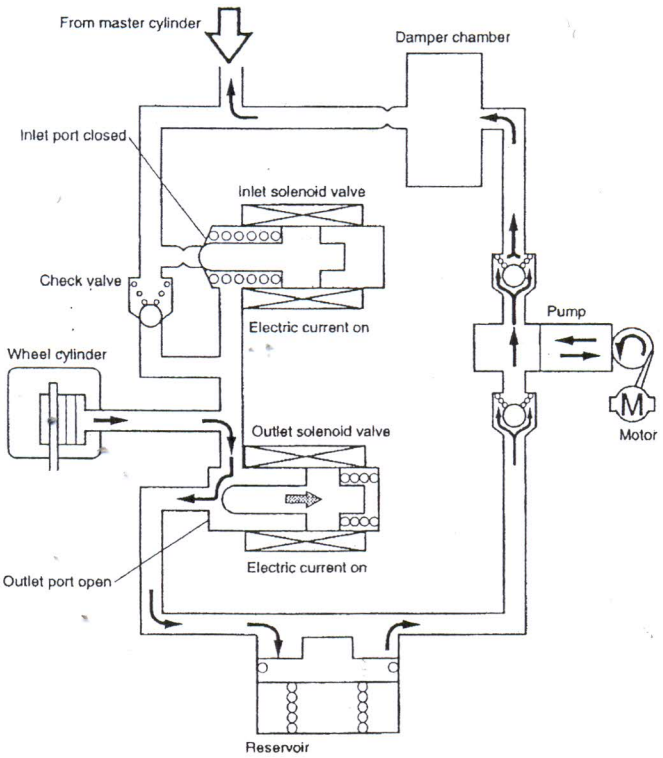

Figure 1: Show an ABS HCU system

i) What type of operation shown in Figure 1? *(3 marks)*

ii) Explained the operation based on your answer in question 1a *(7 marks)*

END OF QUESTION