



UNIVERSITI KUALA LUMPUR
MALAYSIA FRANCE INSTITUTE

FINAL EXAMINATION
SEPTEMBER 2013 SESSION

SUBJECT CODE	: FVD24603
SUBJECT TITLE	: AUTOMOTIVE AIR CONDITIONING SYSTEM
LEVEL	: DIPLOMA
DURATION	: 2 HOURS
DATE / TIME	:

INSTRUCTIONS TO CANDIDATES

1. Please read the instructions given in the question paper **CAREFULLY**.
 2. This question paper is printed on **ONE** 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** sections. Answer all question in Section A and **TWO** question in section B, the **QUESTION 1** in section B is **COMPULSORY**.
 6. Answer all questions in English.
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SECTION A (60 MARKS)**Answer ALL questions.****Question 1**

- (a) What is **FOUR (4)** major function of air conditioning system? (4 marks)
- (b) What is HEAT? Does the heat can be destroyed? Why? (3 marks)
- (c) Heat can be transferred by three methods.
Name and explain each method. (6 marks)
- (d) How does heat gets in the vehicle? (5 marks)
- (e) Explain briefly the function of ozone layer. (4 marks)

Question 2

- (a) List **FIVE** properties of refrigerant R12 (10 marks)
- (b) R134a is a replacement of R12, List FIVE (5) advantages of R134a which makes it suitable for R12 replacement. (5 marks)

Question 3

- (a) Name FIVE types of compressor. (5 marks)
- (b) What is the function of Thermal Expansion valve? (3 marks)
- (c) Some vehicle does not use an expansion valve, but they use a fix orifice tube. State the differences between these two systems. (5 marks)

Question 4

- (a) Explain what is the function of a magnetic clutch? (3 marks)
- (b) In a refrigerant circuit, high pressure switch and low pressure switch are necessary. What are the functions of these pressure switches in Air Conditioning system? (4 marks)
- (c) What will happen if the quantity of compressor oil is inadequately filled while replacing the compressor lubricant? (2 marks)
- (d) What is the function of **SILICA GEL**? (1 mark)

SECTION B (40 MARKS)

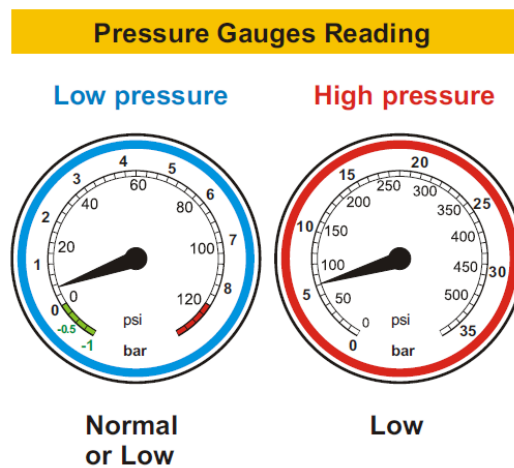
Answer TWO questions only where the QUESTION ONE (1) is compulsory.

Question 1

By using the component below, Draw an electrical connection of electrical air conditioning circuit which can be applied to an actual car.

- A/C switch
- Ignition switch
- Battery
- Normally open relay
- High pressure and low pressure switch
- Thermostat switch
- Condenser fan motor
- Magnetic coil

(25 marks)

Question 2

From the above manifold gauge reading, explain the possible causes that cause the high pressure side reading is too low where the low pressure side is normal.

(15 marks)

Question 3

Explain how to carry out the following tasks on a vehicle: -

- (a) To discharge the air conditioning system by using manifold gauge. (5 marks)
- (b) To evacuate the air conditioning system. (5 marks)
- (c) To recharge the air conditioning system. (5 marks)

END OF QUESTION