



**UNIVERSITI KUALA LUMPUR**  
**MALAYSIA FRANCE INSTITUTE**

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**FINAL EXAMINATION**  
**JANUARY 2014 SESSION**

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**SUBJECT CODE** : FVD24603  
**SUBJECT TITLE** : AUTOMOTIVE AIR CONDITIONING SYSTEM  
**LEVEL** : DIPLOMA  
**DURATION** : 2.5 HOURS  
**DATE / TIME** :

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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** 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) Define what is **OZONE**? (3 marks)
- (b) Describe how the Ozone protects the world. (3 marks)
- (c) Explain what the effects of the ozone depletion are. (4 marks)
- (d) Name **THREE(3)** category of Ultra Violet (3 marks)
- (e) Why UV rays is dangerous to a human being. (3 marks)
- (f) Explain the concept of global warming. (4 marks)

**Question 2**

- (a) List down **FIVE(5)** properties of refrigerant R12 (5 marks)
- (b) R134a is a replacement of R12, List **FIVE (5)** advantages of R134a which makes it suitable for R12 replacement. (5 marks)
- (c) List the different of refrigerant R12 compare to refrigerant R134a (5 marks)
- (d) List down FIVE safety precaution while handling refrigerant R134a (5 marks)

**Question 3**

- (a) List down **FIVE** type of air conditioning compressor (5 marks)
- (b) Explain the function of Fix Orifice tube? (2 marks)
- (c) State the differences between the system that used TXV and the system that used fixed orifice tube. (5 marks)

**Question 4**

- List down the steps to perform a performance testing (cooling capacity). (8 marks)

**SECTION B (40 MARKS)**

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

**Question 1**

By using the components below, draw a connection of the component, state the refrigerant condition in the system and draw a barrier of low pressure side and high pressure side.

- Compressor
- Condenser
- Fixed orifice tube
- High pressure pipe and low pressure pipe
- Evaporator
- Accumulator

(25 marks)

**Question 2**

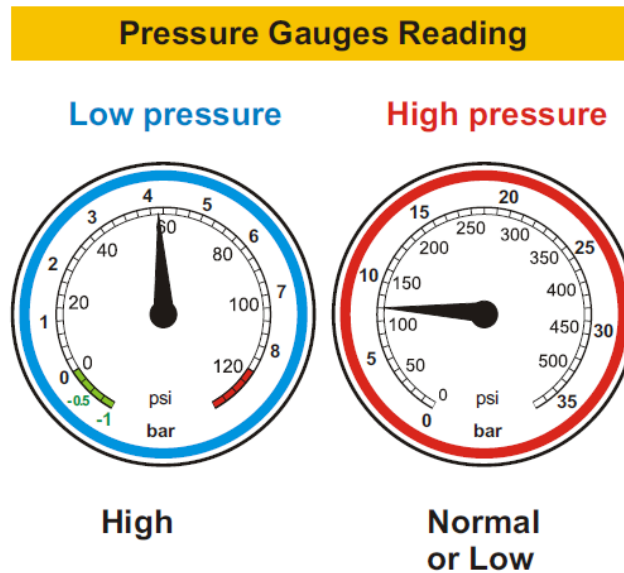


Figure 1

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

(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**